

## Engineering Dual Degree Requirements

### Biomedical Engineering & Chemistry

University Core Curriculum				Common Engineering			
<b>Common Core Requirements</b>				<b>Mathematics</b>			
FYS	101	First Year Seminar	Credits 3	MA	106	Calculus & Analytical Geometry 1 <sup>+</sup>	Credits 4
FYS	102	First Year Seminar	3	MA	107	Calculus & Analytical Geometry 2	4
GHS	201-209	Global and Historical Studies	3	MA	208	Calculus & Analytical Geometry 3	4
GHS	201-209	Global and Historical Studies	3	MA	215	Linear Algebra	3
				MA	334	Differential Equations	3
<b>General Core Requirements</b>				<b>Science</b>			
TI	Text and Ideas		Credits 3	<b>Science</b>			
PCA	Perspectives in the Creative Arts		3	CH	105	General Chemistry 1	-
SW	The Social World		3	CH	106	General Chemistry 2	-
AR	Analytical Reasoning (exempt)		3	PH	201	Introduction to Analytical Physics 1 <sup>+</sup>	5
NW	The Natural World (exempt)		5	PH	202	Introduction to Analytical Physics 2 <sup>+</sup>	5
PWB	Physical Well-Being		1	<b>Engineering</b>			
			Core Credits 22(30)	DD	190	Elementary Engineering Design	Credits 3
<b>Additional Core Requirements</b>				DD	297	MATLAB	1
BCR	Butler Cultural Requirement		8 events	CS	142	Intro to Computer Science & Prog	3
ICR	Indianapolis Community Requirement		1 course	<b>Other</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>				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 42			
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<b>Chemistry</b>				<b>Biomedical Engineering</b>			
CH	105	General Chemistry 1 <sup>+</sup>	Credits 5	CH	351	Organic Chemistry 1	-
CH	106	General Chemistry 2 <sup>+</sup>	5	CH	352	Organic Chemistry 2	-
CH	351	Organic Chemistry 1	5	BI	210	Genetics	4
CH	352	Organic Chemistry 2	5	BI	220	Cellular and Molecular Biology	4
Additional Chemistry Courses <sup>‡</sup>			12	BI	433	Advanced Cell Biology	4
CH	332	Inorganic Chemistry		BME	222	Biomeasurements	4
CH	431	Advanced Inorganic Chemistry		BME	241	Biomechanics	4
CH	432	Synthesis and Characterization		BME	322	Probability & Statistics for BME	3
CH	321	Analytical Chemistry 1		BME	331	Biosignals and Systems	3
CH	422	Analytical Chemistry 2		BME	334	Biomedical Computing	3
CH	424	Instrumental Analysis Laboratory		BME	352	Cell/Tissue Behavior and Properties	3
CH	361	Biochemistry 1: Bio-Organic Chemistry*		BME	354	Probs in Cell/Tissue Behavior & Prop	1
CH	462	Biochemistry IIA: Central Metabolism		BME	381	Implantable Materials & Biological Resp	3
CH	463	Biochemistry Laboratory 1		BME	383	Probs in Implant Materials & Bio Resp	1
CH	471	Physical Chemistry 1 (Quantum Mechanics)		BME	402	Senior Seminar in BME	1
CH	472	Physical Chemistry 2 (Thermo & Kinetics)		BME	411	Quantitative Physiology	3
CH	473	Physical Chemistry Lab		BME	442	Biofluid & Biosolid Mechanics	3
			Credits 32	BME	461	Transport Processes in Biomedical Engr	3
<b>164 - 172 Total Credits</b>				BME	491	Biomedical Engineering Design I	3
				BME	492	Biomedical Engineering Design II	3
				BME Gateway Elective <sup>i</sup>			
				BME/Tech Elective <sup>i</sup>			
				BME/Sci/Tech Electives <sup>i</sup> (*credits used toward 6 cr req)			
				Credits 62			

<sup>+</sup> also required for Chemistry major

<sup>†</sup> may take CH 107 Advanced General Chemistry for 6 cr, must make up 4 addtl cr in Chemistry electives

<sup>‡</sup> must include two of the four areas of Chemistry- Analytical, Biological, Inorganic, Physical

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