

Engineering Dual Degree Requirements

Biomedical Engineering & Computer Science

University Core Curriculum				Common Engineering			
Common Core Requirements				Mathematics			
FYS	101	First Year Seminar	Credits 3	MA	106	Calculus & Analytical Geometry 1 ⁺	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
General Core Requirements				Science			
TI		Text and Ideas	Credits 3	CH	105	General Chemistry 1	Credits 5
PCA		Perspectives in the Creative Arts	3	CH	106	General Chemistry 2	5
SW		The Social World	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	Engineering			
				DD	190	Elementary Engineering Design	Credits 3
		Core Credits	22(30)	DD	297	MATLAB	1
Additional Core Requirements				CS	142	Intro to Computer Science & Prog	3
BCR		Butler Cultural Requirement	8 events	Other			
ICR		Indianapolis Community Requirement	1 course	COM	101	Rhetoric and the American Demo	Credits 3
SAC		Speaking Across the Curriculum	1 course	TCM	250	Career Planning for Engineers	1
WAC		Writing Across the Curriculum	1 course	TCM	360	Comm in Engineering Practice (WAC/SAC)	2
Liberal Arts and Science Requirements				ENGR	200	Engineering Internship	1
		Foreign Language (min 6 cr 200 level or above)	Credits 6-14				Credits 52
		Spanish, French, German, Chinese, Latin	Credits 28-36				
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Computer Science				Biomedical Engineering			
CS	151	Foundations of Computing I	Credits 3	CH	351	Organic Chemistry 1	Credits 5
CS	248	Object-Oriented Prog & Data Structures	5	CH	352	Organic Chemistry 2	5
CS	252	Foundations of Computing II*	3	BI	210	Genetics	4
CS	321	Computer Organization	3	BI	220	Cellular and Molecular Biology	4
CS	333	Database Systems	3	BI	433	Advanced Cell Biology	4
CS	351	Algorithms	3	BME	222	Biomeasurements	4
CS	383	EPICS (ICR)	3	BME	241	Biomechanics	4
CS	452	Parallel Algorithm Design & Prog	3	BME	322	Probability & Statistics for BME	3
CS	473	<i>Topics in Computer Science</i> ¹	-	BME	331	Biosignals and Systems	3
CS	485	Computer Ethics (WAC)	1	BME	334	Biomedical Computing ¹	3
SE	361	Object-Oriented Design (SAC)	3	BME	352	Cell/Tissue Behavior and Properties	3
		Theory Course	3	BME	354	Probs in Cell/Tissue Behavior & Prop	1
CS	441	Organization of Prog Languages	3	BME	381	Implantable Materials & Biological Resp	3
CS	447	Computer Graphics	3	BME	383	Probs in Implant Materials & Bio Resp	1
CS	451	Theory of Computation	3	BME	402	Senior Seminar in BME	1
CS	458	Intro to Cryptography and Cryptanalysis	3	BME	411	Quantitative Physiology	3
		Systems Course	3	BME	442	Biofluid & Biosolid Mechanics	3
CS	431	Theory of Operating Systems	3	BME	461	Transport Processes in Biomedical Engr	3
CS	435	Computer Networks	3	BME	491	Biomedical Engineering Design I	3
SE	461	Managing Software Development	3	BME	492	Biomedical Engineering Design II	3
		Credits	36	BME		Gateway Elective ⁱ	3
				BME		Tech Elective ⁱ	3
				BME		Sci/Tech Elect ⁱ (*credits used toward 6 cr req)	3
188 - 196	Total Credits					Credits	72

¹ used as equivalents for degree requirements

⁺ also required for Computer Science major

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