

# Engineering Dual Degree Requirements

## Biomedical Engineering & Biology

### 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
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### General Core Requirements

General Core Requirements			Credits
TI	Text and Ideas		3
PCA	Perspectives in the Creative Arts		3
SW	The Social World		3
AR	<i>Analytical Reasoning (exempt)</i>		3
NW	<i>The Natural World (exempt)</i>		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

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

Science			Credits
CH	105	General Chemistry 1 <sup>+</sup>	5
CH	106	General Chemistry 2 <sup>+</sup>	5
PH	201	Introduction to Analytical Physics 1	5
PH	202	Introduction to Analytical Physics 2	5

### Engineering

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

### Other

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			52

### Biology

Biology			Credits
BI	111	<i>Contemporary Issues in Biology</i> †	-
BI	210	Genetics	4
BI	220	Cellular and Molecular Biology	4
BI	230	Ecology and Evolutionary Biology	5
BI	299	<i>Biology Seminar</i> †	-
BI	480	Senior Biology Capstone (WAC)	3
Biology Electives (*credits used toward 19 cr req)			7

To acquire the remaining credit hours for the major, students must take biology electives at the 300 level or above; at least four of these electives must be lab courses. One of the electives taken must be an organism-based course. Students will be allowed to use a maximum of three hours of independent study credit, internship credit, research or honors thesis credit toward the 37-hour† minimum required for the biology major.

Credits 23

### Biomedical Engineering

Biomedical Engineering			Credits
CH	351	Organic Chemistry 1	5
CH	352	Organic Chemistry 2	5
BI	210	<i>Genetics</i>	-
BI	220	<i>Cellular and Molecular Biology</i>	-
BI	433	<i>Advanced Cell Biology</i> *	-
BME	222	Biomeasurements	4
BME	241	Biomechanics	4
BME	322	Probability & Statistics for BME	3
BME	331	Biosignals and Systems	3
BME	334	Biomedical Computing	3
BME	352	Cell/Tissue Behavior and Properties*	3
BME	354	Probs in Cell/Tissue Behavior & Prop*	1
BME	381	Implantable Materials & Biological Resp*	3
BME	383	Probs in Implant Materials & Bio Resp*	1
BME	402	Senior Seminar in BME	1
BME	411	Quantitative Physiology	3
BME	442	Biofluid & Biosolid Mechanics	3
BME	461	Transport Processes in Biomedical Engr	3
BME	491	Biomedical Engineering Design I	3
BME	492	Biomedical Engineering Design II	3
BME Gateway Elective <sup>i</sup>			3
BME/Tech Elective <sup>i</sup>			3
BME/Sci/Tech Electives <sup>i</sup>			6
Credits			63

### 166 - 174 Total Credits

† also required for Biology major

† EDDP students are exempt from BI 111 and 299, credits are fulfilled with credits from engineering courses

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