

Name \_\_\_\_\_

Student ID \_\_\_\_\_

Date \_\_\_\_\_

## 2024-25 Biomedical Engineering Checklist

### TRANSFORMATIONAL JOURNEY PROGRAM (TJP)

#### First Year Experience (3 credits)

\_\_\_\_ FYS 110 First Year Seminar

#### Faith and Ethics (9 credits)

\_\_\_\_ THL 105 Introduction to Theology

\_\_\_\_ PHL 130 Human Nature & Person

\_\_\_\_ Second THL\*

#### Scientific Problem Solving

Fulfilled by major requirements

#### Quantitative Problem Solving

Fulfilled by major requirements

#### Civics Problem Solving

Fulfilled by major requirements (EGR 317)

#### Communication (6 credits)

\_\_\_\_ ENG 112 Writing and Community

\_\_\_\_ COM 101 Public Speaking

#### Cultural and Global Awareness (6 credits)

\_\_\_\_ World Language (determined by placement)

One of the following courses:

\_\_\_\_ GLS 101 Global Perspectives

\_\_\_\_ HUM 210 Meaning Through Culture

#### Health and Well-Being (6 credits)

\_\_\_\_ HWB 110 Holistic Health: Mind, Body, and Spirit

One of the following courses:

\_\_\_\_ PSY 101 General Psychology

\_\_\_\_ PSY 220 Human Growth and Development

\_\_\_\_ SOC 101 Introduction to Sociology

#### Broad Integrative Knowledge Outside Major\*\*

- Completion of a minor
- Completion of a second major
- Completion of a Pathway

\*Please refer to catalog or MUHUB Progress tab for a complete list of courses that meet these requirements.

\*\*Please refer to catalog or MUHUB Progress tab for a description of acceptable major/minor options.

### General Math and Science Requirements (27 hours)

\_\_\_\_ MAT 230 Calculus I 4

\_\_\_\_ MAT 231 Calculus II 4

\_\_\_\_ MAT 305 Calculus III 4

\_\_\_\_ EGR 210 Engineering Computation and Modeling 3

\_\_\_\_ CHE 140 General Chemistry I 3

\_\_\_\_ CHE 141L General Chemistry I Lab 1

\_\_\_\_ PHY 201 University Physics I 4

\_\_\_\_ PHY 202 University Physics II 4

### Engineering Core Requirements (24 hours)

\_\_\_\_ EGR 101 Introduction to Engineering 3

\_\_\_\_ EGR 151 Programming for Engineers 3

\_\_\_\_ EGR 156 Intro Computer Aided Design 3

\_\_\_\_ EGR 221 Engineering Mechanics: Statics 3

\_\_\_\_ EGR 242 Linear Circuit Analysis 3

\_\_\_\_ EGR 301 Global Engineering 3

\_\_\_\_ EGR 317 Engineering Economics 3

\_\_\_\_ EGR 491 Engineering Senior Design 3

### Biomedical Engineering Requirements

(8 hours in Biology, 4 additional hours in Chemistry, and 36 hours in BME/EGR courses, totaling 48 hours)

\_\_\_\_ BIO 212 Principles of Biology II 3

\_\_\_\_ BIO 226/226L Physiology 5

\_\_\_\_ CHE 142 General Chemistry II 3

\_\_\_\_ CHE 143L General Chemistry II Lab 1

\_\_\_\_ EGR 326 Engineering Statistics 3

\_\_\_\_ EGR 365 Fluid Mechanics 3

\_\_\_\_ EGR 451 Control Systems 3

\_\_\_\_ BME 203 Intro to Biomedical Engineering 3

\_\_\_\_ BME 226 Biomechanics 3

\_\_\_\_ BME 330 Biomaterials 3

\_\_\_\_ BME 352 Biosignals and Systems 3

\_\_\_\_ BME 366 Biotransport 3

\_\_\_\_ BME 451 Bioinstrumentation 3

\_\_\_\_ BME 492 Senior Design II 3

\_\_\_\_ Biomedical Engineering Elective 3

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**Total Earned Hours** 132

# MARIAN UNIVERSITY

Indianapolis®

## 2024-25 B.S. Biomedical Engineering Major Sample Four-Year Plan

Year One					
Fall Semester			Spring Semester		
Requirement Category	Course	Credit Hrs	Requirement Category	Course	Credit Hrs
Gen Math & Sci: Calculus I	MAT 230	4	Gen Math & Sci: Calculus II	MAT 231	4
Gen Math & Sci: Gen Chem I	CHE 140	3	Gen Math & Sci: University Physics I	PHY 201	4
Gen Math & Sci: Gen Chem I Lab	CHE 141L	1	CORE: Intro Computer Aided Design	EGR 156	3
CORE: Intro Engineering	EGR 101	3	MAJ: Gen Chem II	CHE 142	3
CORE: Programming for Engineers	EGR 151	3	MAJ: Gen Chem II Lab	CHE 143L	1
TJP: First Year Seminar	FYS 110	3	TJP: Holistic Health	HWB 110	3
<b>Semester Hours</b>	<b>17</b>		<b>Semester Hours</b>	<b>18</b>	
<b>Cumulative Hours</b>	<b>17</b>		<b>Cumulative Hours</b>	<b>35</b>	
Year Two					
Fall Semester			Spring Semester		
Requirement Category	Course	Credit Hrs	Requirement Category	Course	Credit Hrs
Gen Math & Sci: Calculus III	MAT 305	4	Gen Math & Sci: Comp & Modeling	EGR 210	3
Gen Math & Sci: University Physics II	PHY 202	4	CORE: Lin Circuit Analysis	EGR 242	3
CORE: Engr Mechanics: Statics	EGR 221	3	MAJ: Principles of Biology II	BIO 212	3
MAJ: Intro to BME	BME 203	3	MAJ: Biomechanics	BME 226	3
TJP: Writing and Community	ENG 112	3	TJP: Intro Theology	THL 105	3
<b>Semester Hours</b>	<b>17</b>		<b>Semester Hours</b>	<b>15</b>	
<b>Cumulative Hours</b>	<b>52</b>		<b>Cumulative Hours</b>	<b>67</b>	
Year Three					
Fall Semester			Spring Semester		
Requirement Category	Course	Credit Hrs	Requirement Category	Course	Credit Hrs
CORE: Global Engineering	EGR 301	3	TJP: Human Nature & Person	PHL 130	3
TJP: Public Speaking	COM 101	3	CORE: Engineering Economics	EGR 317	3
MAJ: Physiology	BIO 226	5	MAJ: Engr Statistics	EGR 326	3
MAJ: Physiology Lab	BIO 226L	0	MAJ: Biosignals & Systems	BME 352	3
MAJ: Fluid Mechanics	EGR 365	3	MAJ: Biotransport	BME 366	3
General Math & Sci: Minor Elect		3	MAJ: Biomaterials	BME 330	3
<b>Semester Hours</b>	<b>17</b>		<b>Semester Hours</b>	<b>18</b>	
<b>Cumulative Hours</b>	<b>84</b>		<b>Cumulative Hours</b>	<b>102</b>	
Year Four					
Fall Semester			Spring Semester		
Requirement Category	Course	Credit Hrs	Requirement Category	Course	Credit Hrs
CORE: Senior Design I	EGR 491	3	TJP: Faith & Ethics #2	2 <sup>nd</sup> THL	3
MAJ: Bioinstrumentation	BME 451	3	MAJ: Senior Design II	BME 492	3
MAJ: Control Systems	EGR 451	3	MAJ: BME Program Elective	BME XXX	3
TJP: Health & Well-Being	PSY/SOC	3	MAJ: BME Program Elective	BME XXX	3
TJP: Cultural/Global	HUM/GLS	3	TJP: World Language	World Lang.	3
<b>Semester Hours</b>	<b>15</b>		<b>Semester Hours</b>	<b>15</b>	
<b>Cumulative Hours</b>	<b>117</b>		<b>Cumulative Hours</b>	<b>132</b>	

\*A minimum 2.0 cumulative GPA and a minimum 2.0 major GPA are required for graduation, so monitor your GPA closely. To meet degree requirements, some disciplines require higher grades in each course or a higher cumulative GPA.

This plan is only a sample and will vary by student and course availability.