

**DUAL DEGREE: B.A. IN MUSIC (from Butler University)
PLUS B.S. IN BIOMEDICAL ENGINEERING (from Purdue University)**

- Engineering contact: Jessica McCormick, 317-940-9021, jrmccorm@butler.edu
- The B.A. degree in Music requires 124 hours.
 - 66 hours must be non-music credits.
 - 40 hours must be 300 or 400-level courses.
- The Dual Degree of Music and Biomedical Engineering will fulfill the following Areas of Inquiry in the Butler University Core Curriculum: Perspectives of the Creative Arts, The Natural World, and Analytical Reasoning. In addition, the B.A. Music curriculum fulfills the Writing Across the Curriculum, Speaking Across the Curriculum, and Social Justice and Diversity requirements of the Butler University Core Curriculum; music majors are exempted from the Butler Cultural Requirement because of the arts event attendance requirements for all arts majors. The Indianapolis Community Requirement is NOT satisfied.

Semester 1

AM 021*	Keyboard Skills 1	1
<i>*If the major instrument is piano, the student should take AM 031, Piano Major: Keyboard Skills 1 and AM 032, Piano Major: Keyboard Skills 2 instead of AM 021, AM 022, AM 023, and AM 024.</i>		
AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
MT 101	Music Theory 1	3
MT 111	Aural Skills 1	1
FYS 101	First Year Seminar	3
PWB ____	Physical Well Being	1
CH 105	General Chemistry 1	5
DD 190	Elementary Engr Design	3

Semester 2

AM 022*	Keyboard Skills 2	1
AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
MT 102	Music Theory 2	3
MT 112	Aural Skills 2	1
FYS 102	First Year Seminar	3
CH 106	General Chemistry 2	5
MA 106**	Calculus & Anal. Geo. 1	4

***Math placement test required. There is the possibility that the student will need to take MA 101 (Algebra, 3 cr.) and/or MA 102 (Precalculus, 3 cr.) prior to MA 106 and MA 107.*

TOTAL Credit Hours: 20 20

Semester 3

AM 023	Keyboard Skills 3	1
AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
MT 201	Music Theory 3	3
MT 211	Aural Skills 3	1
CH 351	Organic Chemistry 1	5
CS 142	Intro to Comp Sc & Prog	3
MA 107	Calculus & Anal Geo. 2	4

Semester 4

AM 024	Keyboard Skills 4	1
AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
MT 202	Music Theory 4	3
MT 212	Aural Skills 4	1
CH 352	Organic Chemistry 2	5
COM 101	Rhetoric and the Am Dem Tra	3
MA 208	Calculus & Anal. Geo. 3	4

TOTAL Credit Hours: 20 20

Summer

GHS ____ Global & Historical Studies 3

Semester 5

AM ____ Major Instrument or Voice 2
ES ____ Major Ensemble 0***
MH 308-SJD Music in Global Contexts 3
BI 210 Genetics 4
DD 297 MATLAB 1
MA 215 Linear Algebra 3
PH 201 Intro to Anal. Physics 1 5
TCM 360-W/C Comm in Engineering Prac 2

Semester 6

AM ____ Major Instrument or Voice 2
ES ____ Major Ensemble 1
BI 220 Cellular & Molecular Biology 4
BME 22200 Biomeasurements 4
BME 24100 Biomechanics 4
PH 202 Intro to Anal. Physics 2 5

****If necessary, the ensemble can be taken non-credit in this semester in order to not exceed the 20-credit limit.*

TOTAL Credit Hours: 20 20

Semester 7

AM ____ Major Instrument or Voice 2
ES ____ Major Ensemble 0***
SW ____ The Social World 3
BI 433 Advanced Cell Biology 4
BME 33100 Biosignals and Systems 3
BME 33400 Biomedical Computing 3
BME 38100 Implantable Mat & Bio Resp 3
BME 38300 Probs in Imp Mat & Bio Resp 1
TCM 250 Career Planning for Eng 1

Semester 8

AM ____ Major Instrument or Voice 2
ES ____ Major Ensemble 0**
MH 305 Music History 1 2
TI ____ Texts and Ideas 3
BME 32200 Prob & Statistics for BME 3
BME 35200 Cell/Tissue Beh & Properties 3
BME 35400 Probs in Cell/Tiss Beh & Prop 1
BME ____ BME Gateway Elective 3
MA 334 Differential Equations 3

****If necessary, the ensemble can be taken non-credit in this semester in order to not exceed the 20-credit limit.*

TOTAL Credit Hours: 20 20

Summer

GHS ____ Global & Historical Studies 3

Semester 9

AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
ME 330-C	Self-Representation for Mus	1
MH 306-W	Music History 2	3
BME 41100	Quantitive Physiology	3
BME 46100	Transport Processes in BME	3
BME 49100	BME Design 1	3
BME ____	BME/Tech Elective	3

TOTAL Credit Hours: 19

Semester 10

AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
ME 430	E-Portfolio Capstone	0
MH 307	Music History 3	3
BME 40200	Senior Seminar in BME	1
BME 44200	Biofluid & Biosolid Mech	3
BME 49200	BME Design 2	3
BME ____	BME/Science/Tech Elective	3
BME ____	BME/Science/Tech Elective	3
ENGR 20010	Engineering Internship	1

20

SUMMARY

REQUIRED MUSIC COURSES:

Note: The 10-semester sequence shown above includes AM 021 and AM 022, 12 additional hours of Applied Music, and 1-4 additional hours of Major Ensemble, in addition to the courses listed below. While not required in the B.A. degree, most music majors will take these additional classes for placement or scholarship reasons.

AM 023, 024*	Keyboard Skills 3, 4	2
	<i>*AM 031 & AM 032 if major instrument is piano</i>	
AM ____	Major Instrument or Voice	8
ES ____	Major Ensemble	6
ME 330-C	Self-Representation for Musicians	1
ME 430	E-Portfolio Capstone	0
MH 305	Music History and Literature 1	2
MH 306-W	Music History and Literature 2	3
MH 307	Music History and Literature 3	3
MH 308-SJD	Music in Global Contexts	3
MT 101	Music Theory 1	3
MT 111	Aural Skills 1	1
MT 102	Music Theory 2	3
MT 112	Aural Skills 2	1
MT 201	Music Theory 3	3
MT 211	Aural Skills 3	1
MT 202	Music Theory 4	3
MT 212	Aural Skills 4	1
	TOTAL	44 <i>(plan shows 59-62 music credits per the note above)</i>

BUTLER UNIVERSITY CORE CURRICULUM:

FYS 101, 102	First Year Seminar	3, 3
GHS ____	Global & Historical Studies	3, 3
SW ____	The Social World	3
TI ____	Texts and Ideas	3
PWB ____	Physical Well Being/Marching Band	1
	TOTAL	19

COURSES REQUIRED FOR THE BIOMEDICAL ENGINEERING DEGREE:

BI 210	Genetics	4
BI 220	Cellular and Molecular Biology	4
BI 433	Advanced Cell Biology	4
BME 22200	Biomeasurements	4
BME 24100	Biomechanics	4
BME 32200	Probability & Statistics for BME	3
BME 33100	Biosignals and Systems	3
BME 33400	Biomedical Computing	3
BME 35200	Cell/Tissue Behavior & Properties	3
BME 35400	Probs in Cell/Tissue Beh & Prop	1
BME 38100	Implantable Mat & Biological Resp	3
BME 38300	Probs in Implant Mat & Bio Resp	1
BME 40200	Senior Seminar in BME	1
BME 41100	Quantitative Physiology	3
BME 44200	Biofluid & Biosolid Mechanics	3
BME 46100	Transport Processes in BME	3

BME 49100	Biomedical Engineering Design 1	3
BME 49200	Biomedical Engineering Design 2	3
BME Gateway Elective		3
BME/Tech Elective		3
BME/Science/Tech Electives		3,3
CH 105	General Chemistry 1	5
CH 106	General Chemistry 2	5
CH 351	Organic Chemistry 1	5
CH 352	Organic Chemistry 2	5
COM 101	Rhetoric & the Amer Dem Tradition	3
CS 142	Intro to Computer Sci & Prog	3
DD 190	Elementary Engineering Design	3
DD 297	MATLAB	1
ENGR 20010	Engineering Internship	1
MA 106**	Calculus & Anal Geometry 1	4
MA 107**	Calculus & Anal Geometry 2	4
MA 208	Calculus & Anal Geometry 3	4
MA 215	Linear Algebra	3
MA 334	Differential Equations	3
PH 201	Intro to Analytical Physics 1	5
PH 202	Intro to Analytical Physics 2	5
TCM 250	Career Planning for Engineers	1
TCM 360-W+C	Comm in Engineering Practice	2
	TOTAL	127

***Students get credit for MA 106 if they receive a 4 or 5 on the Calculus AB AP exam; they receive credit for both MA 106 and MA 107 if they receive a 4 or 5 on the Calculus BC AP exam with a 4 or 5 on the AB subscore.*