

B.A. IN MUSIC PLUS A SECONDARY MAJOR IN COMPUTER SCIENCE

- The B.A. degree in Music requires 124 credits.
 - 66 hours must be non-music credits.
 - 40 hours must be 300 or 400-level courses.
 - All music majors have Arts Event Attendance Requirements; for details, check <https://www.butler.edu/jca/for-current-students>.
- The double major of Music and Computer Science will fulfill the following Areas of Inquiry in the University Core Curriculum: Perspectives of the Creative Arts, Analytic Reasoning, and the Indianapolis Community Requirement. In addition, the B.A. Music curriculum fulfills the Social Justice and Diversity requirement 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 student will be assigned a Computer Science advisor in addition to their Music advisor.

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
CS 151	Foundations of Computing 1	3
Language Elective		3
<i>Explanation: 6 hours of the same language at the 200-level or higher are required.</i>		
TOTAL Credit Hours:		17

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
CS 252	Foundations of Computing 2	3
Language Elective		3
<i>Explanation: 6 hours of the same language at the 200-level or higher are required.</i>		
TOTAL Credit Hours:		17

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
GHS ____	Global and Historical Studies	3
CS 321	Computer Organization	3
CS 333	Database Systems	3
TOTAL Credit Hours:		17

Semester 4

AM 024	Keyboard Skills 4	1
AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
ME 330	Self-Represent for Musicians	1
MT 202	Music Theory 4	3
MT 212	Aural Skills 4	1
CS 248	Object-Orient Prog & Data Str	5
SE 361	Intro to Software Engineering	3
TOTAL Credit Hours:		17

Semester 5

AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
MH 308-SJD	Music in Global Contexts	3
SW ____	The Social World	3
PWB ____	Physical Well-Being	1
CS 351	Algorithms	3
CS 485	Computer Ethics	1
MA 106*	Calculus & Anal. Geo. 1	4

TOTAL Credit Hours: 18

Semester 6

AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
MH 305	Music History 1	2
GHS ____	Global and Historical Studies	3
CS 341	Advanced Data Structures	3
CS 452	Parallel Algorithm Des & Progr	3
MA 107	Calculus & Anal. Geo. 2	4

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**Math placement test required; the student may need to take MA 101 (Algebra, 3 cr.) and/or MA 102 (Precalculus, 3 cr.) prior to MA 106. 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.*

Semester 7

AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
MH 306	Music History 2	3
TI ____	Texts and Ideas	3
CS 382/383-ICR	Epics 2 Service Learning	2-3
CS/SE ____	Systems Course	3
MA 310	Linear Algebra	3

TOTAL Credit Hours: 17-18

Semester 8

AM ____	Major Instrument or Voice	2
ES ____	Major Ensemble	1
ME 430	E-Portfolio Capstone	0
MH 307	Music History 3	3
NW ____	The Natural World	5
CS 311	Vocational Expl in Comp Sc	1
CS 470	Topics in Comp Science	3
CS ____	Theory Course	3

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SUMMARY

REQUIRED MUSIC COURSES:

Note: The 8-semester sequence shown above includes AM 021 and AM 022, as well as 4 additional semesters of Applied Music (8 credits) and 2 additional semesters of Major Ensemble (2 credits), 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	Self-Representation for Musicians	1
ME 430	E-Portfolio Capstone	0
MH 305	Music History and Literature 1	2
MH 306	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 (plan shows 56 music credits per the note above)

UNIVERSITY CORE CURRICULUM:

FYS 101,102	First Year Seminar	3,3
GHS ____	Global and Historical Studies	3,3
NW ____	The Natural World	5
SW ____	The Social World (if needed)	3
TI ____	Texts and Ideas	3
PWB ____	Physical Well-Being	1
TOTAL		24

COURSES REQUIRED FOR THE COMPUTER SCIENCE MAJOR:

CS 151	Foundations of Computing 1	3
CS 248	Object-Oriented Prog & Data Structures	5
CS 252	Foundations of Computing 2	3
CS 311	Vocational Exploration in Computer Science	1
CS 321	Computer Organization	3
CS 333	Database Systems	3
CS 341	Advanced Data Structures	3
CS 351	Algorithms	3
CS 382/3-ICR	Epics 2 Service Learning	2-3
CS 452	Parallel Algorithm Design and Programming	3
CS 470	Topics in Computer Science	3
CS 485	Computer Ethics	1
MA 106*	Calculus and Anal Geometry 1	4

MA 107	Calculus and Anal Geometry 2	4
MA 310	Linear Algebra	3
SE 361	Introduction to Software Engineering	3
ONE Systems Course, chosen from:		3
CS 431	Theory of Operating Systems	
CS 435	Computer Networks	
SE 461	Managing Software Development	
SE 462	Modernizing Legacy Software	
SE 463	Testing and Quality Assurance	
ONE Theory Course, chosen from:		3
CS 441	Organization of Programming Languages	
CS 445	Artificial Intelligence	
CS 447	Computer Graphics	
CS 451	Theory of Computation	
CS 458	Intro to Cryptography and Cryptanalysis	
Language	6 hours of the same language at the 200-level or higher	
TOTAL		59-60

**Math placement test required; the student may need to take MA 101 (Algebra, 3 cr.) and/or MA 102 (Precalculus, 3 cr.) prior to MA 106. 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.*