

# BACHELOR OF SCIENCE IN COMPUTATIONAL MEDIA- MUSIC TECHNOLOGY- INTELLIGENCE

Code	Title	Credit Hours
<b>Wellness Requirement</b>		
APPH 1040	Scientific Foundations of Health	2
	or APPH 10 The Science of Physical Activity and Health	
	or APPH 10 Flourishing: Strategies for Well-being and Resilience	
<b>Core IMPACTS</b>		
<b>Institutional Priority</b>		
CS 1301	Introduction to Computing <sup>1</sup>	3
	or CS 1315 Introduction to Media Computation	
<b>Mathematics and Quantitative Skills</b>		
MATH 1552	Integral Calculus	4
<b>Political Science and U.S. History</b>		
HIST 2111	The United States to 1877	3
	or HIST 2112 The United States since 1877	
	or INTA 1200 American Government in Comparative Perspective	
	or POL 1101 Government of the United States	
	or PUBP 3000 American Constitutional Issues	
<b>Arts, Humanities, and Ethics</b>		
Any HUM		3
Any LMC HUM		3
<b>Communicating in Writing</b>		
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
<b>Technology, Mathematics, and Sciences</b>		
Lab Science		8
MATH 1551	Differential Calculus	2
MATH 1554	Linear Algebra <sup>4</sup>	4
	or MATH 1555 Linear Algebra with Abstract Vector Spaces	
<b>Social Sciences</b>		
PSYC 1101	General Psychology	3
Any SS		6
<b>Field of Study</b>		
CS 1331	Introduction to Object Oriented Programming <sup>1</sup>	3
CS 1332	Data Structures and Algorithms for Applications <sup>1</sup>	3
CS 2050	Introduction to Discrete Mathematics for Computer Science <sup>1</sup>	3
CS 2340	Objects and Design <sup>1</sup>	3
LMC 2700	Introduction to Computational Media <sup>1,2</sup>	3
MATH 2550	Introduction to Multivariable Calculus <sup>4</sup>	2
<b>Major Requirements</b>		
<b>Junior Design Options (Capstone)</b>		
Junior Design Option <sup>1,3</sup>		6
<b>CS Intelligence Requirements</b>		

CS 2110	Computer Organization and Programming <sup>1</sup>	4
CS 4001	Computing, Society, and Professionalism	3
	or CS 4726 Privacy, Technology, Policy, and Law	
	or SLS 3110 Technology and Sustainable Community Development	
CS 3510	Design and Analysis of Algorithms <sup>1</sup>	3
CS 3600	Introduction to Artificial Intelligence <sup>1</sup>	3
Computational Complexity (select one): <sup>1</sup>		3
CS 4510	Automata and Complexity Theory	
CS 3240	Languages and Computation	
Emodied Intelligence (select one): <sup>1</sup>		3
CS 3630	Introduction to Perception and Robotics	
CS 3790	Introduction to Cognitive Science	
PSYC 3040	Sensation and Perception	
Approaches to Intelligence (select two): <sup>1</sup>		6
CS 4495	Computer Vision	
CS 4635	Knowledge-Based Artificial Intelligence	
CS 4641	Machine Learning	
CS 4646	Machine Learning for Trading	
CS 4649	Robot Intelli Planning	
CS 4650	Natural Language Understanding	
CS 4731	Game AI	
<b>Music Technology Requirements</b>		
MUSI 2010	Fundamentals of Musicianship I <sup>1</sup>	3
MUSI 2011	Fundamentals of Musicianship II <sup>1</sup>	3
MUSI 2525	Introduction Audio Technology I <sup>1</sup>	3
MUSI 2526	Introduction to Audio Technology II <sup>1</sup>	3
MUSI 3770	Project Studio: Technology <sup>1</sup>	4
Music Thread Electives <sup>1</sup>		9
MUSI 4450	Integrating Music Into Multimedia	
MUSI 4455	Streaming Media	
MUSI 4456	Music Technology History and Repertoire	
MUSI 4457	Computational Music and Audio Analysis	
MUSI 4458	Computer Music Composition	
MUSI 4459	Digital Signal Processing for Music	
MUSI 4630	Music Recording and Mixing	
MUSI 4650	Music and Sound Design	
MUSI 4670	Music Interface Design	
MUSI 4677	Music Perception and Cognition	
Ensemble <sup>5</sup>		
<b>Free electives</b>		
Free electives		2
<b>Total Credit Hours</b>		<b>122</b>

Pass-Fail is allowed for courses in core areas Arts, Humanities & Ethics, Technology, Mathematics, & Sciences, Social Sciences Core IMPACTS areas and Free Electives.

<sup>1</sup> Minimum grade of C required.

<sup>3</sup> Junior Design Options are as follows (students must pick one option and may not change):

- Option 1  
- LMC 3432, LMC 3431 LMC 3431 LMC 3431 LMC 3431, CS 3311, CS 3312 CS 3312 CS 3312.
- Option 2 - ECE VIP courses and LMC 3403.

- Option 3 - Satisfy Georgia Tech Research Option
- Option 4- CS 2701CS 2701CS 2701 (3 hours), CS 4699-I2P (3 hours), LMC 3403LMC 3403LMC 3403 (3 hours) = 9 hours  
OR CS 4699- I2P (6 hours), LMC 3403LMC 3403LMC 3403 (3 hours) = 9 hours
- Option 5 - CS 4723 (3 hours), LMC 3403 (3 hours) = 6 hours

*\*\*See advisor for requirements to substitute Research Option OR VIP*

*Option for Junior Design OR Create X OR MUSI 4705/MUSI 4706*

Six credits of the Junior Design option are used as Major Requirements and the overage credits of research/VIP (5 credit hours/2 credit hours) may be used as free electives. Students completing VIP for their junior design requirement will be required to complete at least three semesters of VIP. (VIP 1 + VIP 2 + VIP 3) (for a total of 5 credit hours) + LMC 3403 = 8 hours of VIP credit.

Students using CREATE-X for junior design take at least 6 hours of CREATE-X Start-up Lab and Idea 2 Prototype (I2P) and 3 of the 6 hours must be I2P. Students take these 6 hours with LMC 3403 (3 hours) for a total of 9 hours. Extra three hours for CREATE-X option can be used in free electives.

<sup>4</sup> Two credit hours of MATH 1554 may count along with MATH 2550 to give Field of Study 18 credit hours.

<sup>5</sup> Four (4) credit hours of Ensemble maximum