

BACHELOR OF SCIENCE IN MUSIC TECHNOLOGY - ELECTRICAL AND COMPUTER ENGINEERING: SIGNAL PROCESSING

The Bachelor of Science in Music Technology teaches students the fundamentals of musicianship and audio technology. Students learn to create new music with technology, develop new technologies for making music, and conduct scientific research that expands our knowledge of how both humans and machines engage with music. Student projects span areas such as robotic musicianship, music informatics, brain music, and computational and cognitive musicology.

Bachelor of Science in Music Technology students will need to consult with the undergraduate advisor to choose a concentration or minor.

The Electrical and Computer Engineering Track allows students to develop in-depth audio engineering and/or signal processing skills as applied to music technology. The processing of analog and digital signals is one of the core areas of music technology and related to fields such as music information retrieval, audio effects, and sound synthesis. Students use their Breadth Block to take prescribed coursework in the School of Electrical and Computer Engineering.

Code	Title	Credit Hours
Wellness Requirement		
APPH 1040	Scientific Foundations of Health or APPH 10 The Science of Physical Activity and Health or APPH 10 Flourishing: Strategies for Well-being and Resilience	2
Core IMPACTS		
Institutional Priority		
CS 1371	Computing for Engineers or CS 1301 Introduction to Computing or CS 1315 Introduction to Media Computation	3
Mathematics and Quantitative Skills		
MATH 1552	Integral Calculus	4
Political Science and U.S. History		
HIST 2111	The United States to 1877 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	3
Arts, Humanities, and Ethics		
Any HUM		6
Communicating in Writing		
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
Technology, Mathematics, and Sciences		
Any Lab Science ¹		8
MATH 1551	Differential Calculus	2

MATH 1553	Introduction to Linear Algebra	2
Social Sciences		
Any SS		9
Field of Study		
MUSI 2010	Fundamentals of Musicianship I	3
MUSI 2011	Fundamentals of Musicianship II	3
MUSI 2012	Fundamentals of Musicianship III	3
MUSI 2013	Fundamentals of Musicianship IV	3
MUSI 2015	Laptop Orchestra	3
MUSI 2525	Introduction Audio Technology I	3
Major Requirements		
MUSI Ensemble Requirement ²		
MUSI 2526	Introduction to Audio Technology II	3
MUSI 4630	Music Recording and Mixing	3
MUSI 3770	Project Studio: Technology ³	4
MUSI 4677	Music Perception and Cognition	3
MUSI Upper Division (4000-level) Elective ³		6
MUSI 4705	Music Technology Capstone I	4
MUSI Additional Electives (any MUSI 4000-level courses or ensemble courses) ²		5
Concentration: ECE/Signal Processing		
MATH 2552	Differential Equations	4
ECE 2026	Introduction to Signal Processing	3
ECE 3084	Signals and Systems	3
ECE 3710	Circuits and Electronics	2
ECE 3741	Instrumentation and Electronics Lab	1
ECE 4270	Fundamentals of Digital Signal Processing	3
ECE 4271	Applications of Digital Signal Processing	4
ECE 4445	Audio Engineering	3
Free Electives		
Free Electives		8
Total Credit Hours		122

¹ Students are highly encouraged to enroll in PHYS 2211 and PHYS 2212.

² Students are required to satisfy a 4-course music ensemble requirement. Course options include any four courses from the following list: MUSI 3018 or MUSI 3019 or MUSI 3121 or MUSI 3131 or MUSI 3231 or MUSI 3241 or MUSI 3251 or MUSI 3261 or MUSI 3311 or MUSI 3321 or MUSI 3411 or MUSI 3511 or MUSI 3531 or MUSI 3541 or MUSI 3551 or MUSI 3611. The courses may be used as Core IMPACTS Arts, Ethics and Humanities (if course has been approved for Humanities credit) and/or free electives.

³ Music Technology majors can choose one pathway to use VIP participation to fulfill degree requirements.

The VIP Elective Pathway: Students participate in any VIP team to fulfill an upper-division music technology elective and free electives.

- Participating in the same VIP team for five or fewer credits results in that many free-elective credits.
- Participating in the same VIP team for 6 or more credits results in 3 credits that are counted as upper division Music Technology electives and 3 credits that are counted as free electives.
- Any additional credits count as free electives.

- Any VIP team is eligible for this pathway. No approval is required by an academic advisor in music technology.