

MUSIC TECHNOLOGY AND COMPUTATION

Music technology is the field of scientific inquiry where practitioners study, discover, and develop new approaches to computational models of music that include data analysis, generative algorithms, interaction and performance systems (including hardware, input devices and sensors), conceptual and perceptual modeling, and tools for creative expression and music applications.

Master of Science in Music Technology and Computation

The Master of Science in Music Technology and Computation (<https://catalog.mit.edu/degree-charts/master-music-technology-computation/#smtext>) is a one-year, thesis-based residential program that focuses on the study and development of computational models of music. The curriculum includes machine learning for music analysis and generation, real-time music interaction and performance systems, music information retrieval, audio signal processing, acoustics, and digital instrument design.

This program is available to MIT undergraduate students who will have completed a four-year Bachelor of Science degree and have strong preparation in technical subjects (computation, engineering, design) and music (theory, composition, performance, musicology and/or ethnomusicology). It is highly recommended that students complete 12–24 units of music technology graduate subjects while still in undergraduate status. These units cannot count towards the undergraduate degree, but will count towards the Master of Science.

With departmental approval, students select 68 units of graduate subjects in music, music technology, and restricted electives, including the colloquium in music technology and the research seminar. The Master of Science degree also requires 24 units of thesis credit. Candidates must be matched to an approved thesis advisor as part of the application process.

Graduates will be well prepared for endeavors that require advanced multidisciplinary skills combining music, engineering, computation, and design, such as careers in music production tools, digital musical instruments, interactive design, digital music services, or creative software development. Graduates will also be prepared to continue on to PhD programs in music technology, either at MIT or at peer institutions.

Master of Applied Science in Music Technology and Computation

The Master of Applied Science in Music Technology and Computation (<https://catalog.mit.edu/degree-charts/master-music-technology-computation/#masctext>) is a one-year, coursework-based, residential program that focuses on the study and development of computational models of music. The curriculum includes machine learning for music analysis and generation, real-time music

interaction and performance systems, music information retrieval, and digital instrument design.

This program is intended for individuals with preparation in both music (theory, composition, performance, musicology and/or ethnomusicology) and technical subjects (computer science, engineering and/or mathematics).

With departmental approval, students select 90 units of graduate subjects in music, music technology, and restricted electives, including the colloquium in music technology. The first semester comprises foundational classes, while the second semester focuses on advanced subjects in music technology, including the completion of a capstone project.

Graduates will be well prepared for endeavors that require advanced multidisciplinary skills combining music, engineering, computation, and design, such as careers in music production tools, digital musical instruments, interactive design, digital music services, or creative software development.