MUSIC TECHNOLOGY (MPATE-UE)

MPATE-UE 92 Collegium and Program Seminar (0 Credits)
Typically offered Fall and Spring
All undergraduate music majors meet in Collegium six times each semester to discuss broad issues of the music profession, career opportunities, and department matters. During the remaining weeks students meet with members of their major program for visits with specialists in their field and for programmatic discussions.
Grading: Ugrd Steinhardt Pass/Fail
Repeatable for additional credit: Yes

MPATE-UE 1000 Independent Study (1-6 Credits)
Typically offered Fall and Spring
It should be noted that independent study requires a minimum of 45 hours of work per point. Independent study cannot be applied to the established professional education sequence in teaching curricula. Each departmental program has established its own maximum credit allowance for independent study. This information may be obtained from a student's department prior to registering for independent study, each student obtain an independent study approval from the adviser.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: Yes

MPATE-UE 1001 Analog Recording Technology (3 Credits)
Typically offered Fall and Summer terms
The physical aspects of sound, analog recording technology & studio production techniques are explained & demonstrated. Lecture topics include microphones, stereo recording, analog consoles, multi-track tape recording, equalization, compression, reverberation & mixing. Studio lab assignments are performed outside of class reinforcing weekly lecture topics
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1003 Digital Recording Technology (3 Credits)
Typically offered Fall, Spring, and Summer terms
Digital recording technology & production techniques are explained & demonstrated. Lecture topics engage analog to digital conversion, digital to analog conversion, digital signal theory & filter design, digital audio effects & mixing. Studio lab assignments are performed outside of class reinforcing weekly lecture topics.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1005 Studio Production Techniques (4 Credits)
Typically offered Fall
Principles covered in MPATE-UE1001 & MPATE-UE-1003 are put into practice with additional theory & techniques. Students perform various duties just as they would in a professional recording session. Studio Lab assignments are performed outside of class reinforcing weekly topics.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1006 Applied Studio Production (4 Credits)
Typically offered Spring
Hands-on studio course with an emphasis on ear training to increase understanding of different technical & artistic practices in the recording studio. Students will explore use of microphone placement techniques, balancing natural & artificial acoustics as well as dynamic audio effects & filters.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1008 Fund of Audio Tech I: Stu Maint (2 Credits)
Typically offered Fall
An introduction to maintenance and troubleshooting concepts used in the recording studio. Procedures discussed are those necessary in utilizing sophisticated audio equipment and understanding essential aspects of studio design.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1009 Fund of Audio Tech II: Stu Maint (3 Credits)
Typically offered Spring
Advanced work in studio repair and maintenance focusing on digital equipment. Students will develop practical skills tracing schematics, using test equipment, and replacing components as required daily in the studio environment.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1010 Introduction to Audio for Video (2 Credits)
Typically offered Fall, Spring, and Summer terms
An introduction to the concepts & applications of audio production for video, television & film. Current production techniques frequently used in the post-production industry will be explored, with special emphasis on synchronization & audio production techniques including music editing, sound effects design, Foley, & dialog replacement.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1011 Concert Recording (2 Credits)
Typically offered Fall, Spring, and Summer terms
Introduction to the concepts of live concert recording. Microphone selection, characteristics & placement as well as acoustic problems encountered in concert halls will be discussed. Students will have the opportunity to apply the lecture material by recording undergraduate rehearsals & recitals.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No
Prerequisites: MPATE-UE 1801 and must be in plan code UEMUSTBMUS or UEMTBDBMUS.

MPATE-UE 1014 Midi Technology II (3 Credits)
Typically offered Fall and Spring
Programming for MIDI, C, and other appropriate techniques. Design and implementation of software sequencers, interface drivers, and hardware applications will be the focus.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1017 Electronic Product Design for Music and Audio (3 Credits)
This is a multidisciplinary course in which students with previous experience with analog and digital electronics create a novel hardware--based electronic musical instrument, controller, effects unit, or other device related to their interests in music and audio. Student projects may be analog, digital, or a hybrid, and should be unique in some way from devices currently in the commercial marketplace. Students present their designs and functioning physical prototypes with the class as they evolve throughout the semester for feedback.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: Yes

MPATE-UE 1019 Electronic Music Performance (2 Credits)
Typically offered Fall, Spring, and Summer terms
Through weekly performing, readings and discussions, students study the conceptualization and production of live electronics ensemble performance. Students create new works, improvisations, and rehearse compositions from a growing repertoire of electronic ensemble compositions, to be performed at a semester's end public concert.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: Yes

MPATE-UE 1022 Rcdg Tech for Non Majors (3 Credits)
Typically offered Fall and Spring
Introduction to the physical aspects of sound, psychoacoustics, basic electricity, principles and practice of magnetic recording and an overview of the recording studio, including an introduction to multi-track recording techniques. Students perform various duties just as they would in a professional recording session with live musicians in the recording studio. Open to students without previous experience in recording technology.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1035 Musical Acoustics (3 Credits)
Typically offered Fall and Summer terms
An introduction to the field of acoustics emphasizing sound production by musical instruments, propagation of sound from source to listener (including electronic reproduction), and psychoacoustics perception of sound.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1037 Elect Music Synthesis: Fundamental Techn (3 Credits)
Typically offered Fall, Spring, and Summer terms
This course focuses on electronic music synthesizer techniques. Concepts in the synthesis of music, including generation of sound, voltage control, and treatment of sound and tape techniques. Included is a short synopsis of the history and literature of analog electronic music. Students complete laboratory tasks and compositions on vintage synthesizer modules and create one or more final projects that demonstrate(s) the application of these concepts.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1038 Global Electronic Music I (3 Credits)
This studio course examines a mixtape selection of electronic music from around the world using music theory and composition. Global electronic music necessitates diverse methodologies in critical discussion of the research of this music in a post/neo-colonial setting. Students engage in critical discussion of the studio and the digital audio workstation as compositional tools and of the music itself as innovation, communication, and historiography in global communities of the Information age
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1047 Comp Music Synthesis: Fundamental Techniques (3 Credits)
Typically offered Fall and Spring
Introduction for teachers, composers, and performers to explore potentials of computer music synthesis. Basic concepts of music synthesis presented through the use of a microcomputer, keyboard, and appropriate software. System may be used as a real-time performance instrument or as a studio composition instrument. Educators may explore potentials for classroom application.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1070 Software Music Production (3 Credits)
Typically offered Fall and Spring
Analytical and theoretical concepts required grasping the aesthetic development of electronic and computer music compositions. The course emphasizes analysis and historical understanding of techniques of production and compositional ideas.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1112 Live Sound Reinforcement (3 Credits)
Typically offered not typically offered
A focus on basic knowledge of live sound reinforcement; applicable to interested students in music theatre, or the performing arts. Course topics introduce mixing consoles, room EQ, speakers, amplification, systems, monitoring systems and electrical requirements, as appropriate to the field.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: Yes

MPATE-UE 1113 Music, the Mind and Artificial Intelligence (4 Credits)
Music is universal to all human cultures. This course will explore fundamental concepts of the psychological, emotional, and cognitive effects of music and what factors in the human body and brain are involved in producing them, with particular emphasis on cross-cultural study. Students will learn beginning methods of computational feature extraction and machine learning to explore simple artificial intelligence models that build on and articulate the conceptual frameworks of music and cognition introduced in the initial phase of the class.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1225 Applied Audio for Video (3 Credits)
Typically offered Spring and Summer
A continuation of MPATE-UE 1010. This is an advanced & detailed study of the audio-visual production & post-production process including digital recording techniques, with special emphasis on synchronization & the interfacing of SMPTE time code. Sound design, advanced Foley topics, * creative workflow in audio post production will also be discussed.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1227 Aesthetics of Recording (2 Credits)
Typically offered Spring
A critical listening study of acoustic music recordings that develops the student's ability to define and evaluate aesthetic elements of recorded music. Students explore recorded music attributes including dynamic range, stereo imaging, perceived room acoustics, the use of reverb and equalization, naturalness, and the listening perspectives.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1633 Advanced Topics in Music Technology: Multichannel Media Installation and Performance (3 Credits)
Typically offered Spring
Multichannel Media Installation & Performance is a course designed for composers & artists who want to work in a performance or installation context with immersive sound & image technology. The course focuses on software & hardware workflows for the creative applications of multi-channel sound & immersive video for the creation of fixed, generative, reactive, performance-based, & interactive systems that can be experienced in a gallery context or a live performance. Students will develop a semester-length project to use scale & immersion to creative effect. The course will feature regular creative critique as well as an overview of relevant interaction design strategies for creating interactive spaces using sensors & cameras.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1801 Fundamentals of Music Technology (2 Credits)
Typically offered Fall
A general introduction to the fundamental concepts of music technology, including: MIDI and sequencing, the basics of digital audio, sound recording, mixing and sound synthesis,. The course will also briefly overview advanced topics and applications in the field.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1810 Midi for Non-Majors (3 Credits)
Typically offered Fall and Spring
An introduction to MIDI (Musical Instrument Digital Interface) with an emphasis on sequencing, production and arranging techniques. Open to students without previous experience in music technology.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1817 Analog Electronics (3 Credits)
Typically offered Fall and Spring
An introduction to Analog Electronic theory including solid-state devices. Ohm's Law & related measurement techniques will be explored. Students must enroll in a Lab section to apply hands-on experience in basic circuit design & measurement.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1818 Digital Electronics (3 Credits)
Typically offered Fall and Spring
An introduction to Digital Electronics, including binary systems & logic. Students must enroll in a Lab section to apply hands-on experience in simple computer programming techniques, digital processing applied to music with specific relevance to computer music synthesis & MIDI.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1820 Internship in Music Technology (1-6 Credits)
Typically offered Fall, Spring, and Summer terms
Assignment to studios and/or corporations for on-the-job training.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: Yes

MPATE-UE 1827 Analog Electronics Lab (1 Credit)
Typically offered Fall and Spring
Hands-on lab accompanying Analog Electronics. Lab sessions will contain hands-on experience with analog audio circuitry. The course culminates with a student developed final project.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1828 Digital Electronics Lab (1 Credit)
Typically offered Fall and Spring
Hands-on lab accompanying Digital Electronics. Lab sessions will contain hands-on experience with logic circuits & microcontrollers. The course culminates with a student developed final project.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 1900 Music Technology Undergraduate Capstone Project (1 Credit)
Typically offered Fall and Spring
This course serves as the capstone project class & will provide Seniors guidance & tools to complete an original project of their choice. Students will work with the instructor to define a project, research methods, & work plan. The class will be a combination of group & individual meetings. The experience culminates in a written document & a presentation to peers and faculty
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: Yes

MPATE-UE 9010 Sound Design (3 Credits)
Sound Design
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 9047 Electroacoustic Comp (3 Credits)
This course is designed to introduce the student to contemporary practices of creating and presenting electroacoustic music from the practical perspectives of analyzing works and understanding current technologies and aesthetic paradigms. In addition to musicological issues, composition will be placed in the wider context of contemporary art and New Media practices. This is a composition class that uses a music appreciation format to teach music creation today.Practical compositional lectures by Michal Rataj will focus on the analysis of a few key works, each dealing with specific aspects of music and technology and individual compositional approaches. Eric Rosenzveig will present theoretical classes providing an overview, background and competing theories from the varied perspectives of the artist, philosopher, technologist, musician and composer. We will try and look at the question "why" in addition to "how" to make a new work. We'll listen to many shorter works in class, to provide context to our discussions.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No

MPATE-UE 9055 Sound Design and Spatialization at IRCAM (6 Credits)
This course focuses on three important areas in music technology:
spatialization, computer aided composition, analysis & synthesis
techniques. In each area, concepts & implementations will be explored in
a variety of artistic & technological contexts. Students will work with the
latest technologies including IRCAM Tools, Spat plugin, Max Bach library,
Ambisonics, & Wave Field Synthesis. The course includes a 3-hour weekly
lecture, 3-hour studio lab, & workshops at IRCAM. This course is taught in
collaboration with IRCAM in Paris, one of the world leading institutions in
computer music and acoustics.
Grading: Ugrd Steinhardt Graded
Repeatable for additional credit: No