Music Technology

The Music Technology program offers courses for students who wish to earn a certificate or an associate degree in music technology or who plan on transferring as a music major to a four-year institution. Areas of focus include audio production, audio for media, sound reinforcement, and the principles of business in the field of music and media.

Academic and Career Pathway

Creative and Applied Arts (https://www.miracosta.edu/academics/degree-and-certificate-programs/creative-and-applied-arts/)

Contact Information

Chair: Dan Siegel
Dean: Jonathan Fohrman
https://www.miracosta.edu/academics/degree-and-certificate-programs/creative-and-applied-arts/music-technology/index.html (https://www.miracosta.edu/academics/degree-and-certificate-programs/creative-and-applied-arts/music-technology/)

Department: Music
Office: Building OC2700, 760.795.6844

Full-Time Faculty

Dan Siegel

Associate Degree

Associate in Arts Degree

Music Technology

The Music Technology program prepares students for careers in the ever-evolving field of audio and media production. Students who complete the program can apply their skills to positions in all facets of the entertainment industry, including audio production, live sound, sound for film and visual media, audio equipment maintenance, and content creation and licensing. In addition to the technical aspects of careers in these areas, program participants will also focus on critical thinking, problem-solving, and the fundamentals of project management and communication.

Students may earn the above-named associate degree by completing a certificate of achievement and the general education courses required for the Associate in Arts degree (see Associate Degrees (https://catalog.miracosta.edu/degreecertificatetransferinfo/requirements/)). Students should meet with a MiraCosta counselor to identify required courses and to develop a written education plan for the specific degree or certificate they wish to earn.

Certificates

Certificate of Achievement

Music Technology

The Certificate of Achievement in Music Technology is designed to give students broad knowledge of all facets of audio production and delivery across current audio platforms. Students successfully completing the program will receive a fundamental and practical education that meets the technical and strategic demands of employers in the industries of media production, sound reinforcement, and audio for visual media for broadcast and streaming. The integration of industry certifications further enhances the advantages of the program.

Program Student Learning Outcomes

Upon completion of this program, the student will be able to do the following:

- Use available technologies to create professional musical productions that meet industry standards suitable for delivery across current audio platforms.
- Work both individually and within a group to support and produce live sound presentations using sound reinforcement and recording equipment within a given time frame.
- Identify the creative, technological, and commercial methods and strategies implemented in the production, distribution, and marketing of contemporary media productions.

Course Requirements

Music technology core coursework:		
MTEC 110	Recording Arts I	2
MTEC 111	Recording Arts II	2
MTEC 120	Digital Audio Production I	2
MTEC 130	Electronic Music I	2
MTEC 140	Sound Reinforcement I	2
MTEC 160	Business of Music and Media I	3
MTEC 210	Recording Arts III	2
MTEC 211	Recording Arts IV	2
MTEC 220	Digital Audio Production II	2
MTEC 240	Sound Reinforcement II	2
Required Music Technology Electives (complete 6 units from the following):		6
MTEC 125	Sound for Visual Media	
MTEC 150	Acoustics and Audio Electronics	
MTEC 230	Electronic Music II	
MTEC 260	Business of Music and Media II	
Music Theory and Performance Training (complete 3 units from the following):		3
MUS 110	Theory/Musicianship I	
MUS 120	Piano I	
MUS 121	Piano II	
MUS 130A	Guitar I	
MUS 130B	Guitar II	
MUS 141A	Vocal Fundamentals I	
MUS 141B	Vocal Fundamentals II	
MUS 230A	Guitar III	
MUS 230B	Guitar IV	
MUS 241A	Advanced Vocal Techniques I	
MUS 241B	Advanced Vocal Techniques II	
Elective Courses (complete at least 3 units from the following):		3

BUS 130	Entrepreneurship and Small Business Management	
BUS 132	Marketing	
BUS 138	Business Promotion	
COMM 106	Group Communication	
CS 150	C++ Programming	
CS 151	Advanced C++ Programming	
CSIT 110	Computer Applications	
CSIT 120	Fundamentals of Computer Information Systems	
CSIT 155	Social Media for Business	
CSIT 160	Technology, the Individual, and Society	
DRAM 110	Voice and Diction	
FILM 101	Introduction to Film	
or FILM 101H	Introduction to Film (Honors)	
MAT 120	Media Design 1: Production	
MAT 125	Web Design 1: Fundamentals	
MAT 150	Animation and Interactivity	
MAT 160	Video 1: Production	
MAT 165	Web Design 2: WordPress and Site Production	
MAT 290	Portfolio Development	
MTEC 292	Internship Studies	
MTEC 299	Occupational Work Experience Education	
Total Units		**33**

Certificate of Achievement

Business of Music and Media

This program begins with the fundamentals of intellectual property and contract law and expands to the strategies of exploitation of creative works in today's marketplace. Students who complete the Business of Music and Media program can apply their skills to professional positions in all facets of the entertainment industry.

Program Student Learning Outcomes

Upon completion of this program, the student will be able to do the following:

- Demonstrate an understanding of intellectual property laws as they specifically apply to the entertainment industry.
- Understand the process of affiliation with the appropriate organizations for the registration and collection of copyright royalties.
- Demonstrate the ability to understand and interpret contracts and terminology specifically found in the entertainment industry.

Course Requirements

Required courses:		
FILM 112	Film History II: 1948-Present	3
MTEC 160	Business of Music and Media I	3
MTEC 260	Business of Music and Media II	2
MUS 112	American Popular Music	3
Business Electives - select nine units from the following:		9
BUS 130	Entrepreneurship and Small Business Management	
BUS 131	Management Principles	
BUS 136	Human Relations in Business	
BUS 140	Legal Environment of Business	
Internship - select two units from the following:		2
MTEC 292	Internship Studies	
MUS 292	Internship Studies	
Total Units		**22**

Certificate of Proficiency

Music Technology

The Music Technology Certificate is designed to provide concepts and application of principles needed to successfully operate and maintain audio equipment. The curricula ranges from the recording studio to stage and touring. Upon successful completion a student will possess skills necessary for employment as an audio technician, producer, engineer and music products salesperson.

Program Student Learning Outcome

Upon completion of this program, a student will be able to achieve proficiency in various aspects of music technology such as equipment setup, procurement, and application.

Course Requirements

Required courses:		
DRAM 141	Lighting Design for Theatre, Television, and Film	3
or MTEC 160	Business of Music and Media I	
MTEC 110	Recording Arts I	2
MTEC 120	Digital Audio Production I	2
MTEC 130	Electronic Music I	2
MTEC 140	Sound Reinforcement I	2
MTEC 150	Acoustics and Audio Electronics	2
Total Units		**13**

Courses

MTEC 110: Recording Arts I
Units: 2
Prerequisites: None
Advisory: MUS 110 and MUS 144A
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Fall, Spring, and Summer

This first in a sequence of four recording arts courses presents an introductory overview of the audio production process. Topics include the physics of sound, transducers, audio processors, and recording-studio logistics. C-ID CMUS130X.

MTEC 111: Recording Arts II
Units: 2
Prerequisites: MTEC 110 and MTEC 120.
Enrollment Limitation: Concurrent enrollment in MTEC 120 if MTEC 120 prerequisite not met.
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Fall, Spring

This is the second in a series of four courses designed as the study of the theory and application of methods and tools in the field of recording arts and audio production.

MTEC 120: Digital Audio Production I
Units: 2
Prerequisites: None
Advisory: MTEC 110.
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Fall, Spring

This course is a survey of the various procedures and technology used in contemporary audio production in the digital domain. Course work includes the Avid Pro Tools 101 Certification Test. Students are required to own or have ongoing personal access to a working copy of the Avid ProTools Digital Audio Software application and a suitable computer. C-ID CMUS-120X.

MTEC 125: Sound for Visual Media
Units: 3
Prerequisites: None
Acceptable for Credit: CSU
Lecture 2 hours, laboratory 3 hours.
Course Typically Offered: Fall

Students learn the theory and practice of audio production for film, television, and visual media. Topics include fundamentals of acoustics, microphones, digital audio workstations (DAWs), audio editing, and mixing.

MTEC 130: Electronic Music I
Units: 2
Prerequisites: None
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Fall, Spring

This survey course explores the full range of Musical Instrument Digital Interface (MIDI) capable software and hardware including associated production techniques for music composition, performance, and recording.

MTEC 140: Sound Reinforcement I
Units: 2
Prerequisites: None
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Fall

This course provides an overview of the theory and application of live concert sound reinforcement. Topics include the physics of sound, the individual sound system components and their functions, and the application and use of microphones, mixers, amplifiers, and speaker systems. Field trips are required for successful completion of the course.

MTEC 150: Acoustics and Audio Electronics
Units: 2
Prerequisites: None
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Spring

This course provides a comprehensive introduction to the fundamentals of acoustics and audio electronics principles. Students will explore key concepts such as sound wave properties, electronics theory, signal path, basic circuitry, transduction, and audio equipment maintenance. Participants will gain a theoretical understanding of audio theory that is used in music production, and practical hands-on experience in the application of those concepts in different acoustic environments.

MTEC 160: Business of Music and Media I
Units: 3
Prerequisites: None
Acceptable for Credit: CSU
Lecture 3 hours.
Course Typically Offered: Fall

This course explores the essential topics relevant to participation in the contemporary music and media industry: intellectual property rights, copyright law, publishing administration, performing rights organizations, music licensing, contracts, and artist representation. C-ID CMUS-140X.

MTEC 210: Recording Arts III
Units: 2
Prerequisites: MTEC 111.
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Fall

This third in a four-course sequence provides an in-depth technical and applied study of recording techniques covered in the previous recording arts courses. Topics include complex signal path routing, effects and dynamics processing, mixing and file export. Students work within a group and utilize studio time to complete assignments within a given timeline.

MTEC 211: Recording Arts IV
Units: 2
Prerequisites: MTEC 210.
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Spring

This fourth and final course in the recording arts sequence focuses on the technical, creative, and logistical aspects of commercial music production. Students are required to individually organize and complete several recording projects that meet specific contemporary music marketplace criteria.

MTEC 220: Digital Audio Production II
Units: 2
Prerequisites: MTEC 120.
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Spring

This course is an in-depth study of advanced digital audio production techniques in the Avid Pro Tools software environment. Specific topics include system setup, recording, editing, processing, mixing and synchronization of audio with video. Course work includes the Avid Pro Tools certification tests. Students are required to have access to a working copy of the Avid ProTools digital audio software application installed on a suitable computer.

MTEC 230: Electronic Music II
Units: 2
Prerequisites: MTEC 130.
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Fall, Spring

This course provides an exploration and in-depth study of the various techniques of synthesis and sound creation, and the art and science of their application in contemporary music and audio-post production. Students will learn how to design and edit natural and electronic sounds that can be used in music composition, or in conjunction with visual media.

MTEC 240: Sound Reinforcement II
Units: 2
Prerequisites: MTEC 140.
Enrollment Limitation: Not open to students with prior credit in MTEC 141.
Acceptable for Credit: CSU
Lecture 1.50 hours, laboratory 1.50 hours.
Course Typically Offered: Spring

This course covers advanced topics in sound system design and operation, wireless theory and optimization, audio networking software, and advanced mixing techniques. Topics include audio software, audio system tuning, audio networking protocols, speaker theory and optimization, and festival planning and implementation. Field trips are required for successful completion of the course.

MTEC 260: Business of Music and Media II
Units: 2
Prerequisites: MTEC 160.
Acceptable for Credit: CSU
Lecture 2 hours.
Course Typically Offered: Spring

This second in a two-course series covers effective methods of exploitation and monetization of creative works in the current industry marketplace. Specific topics include careers in music and media, independent music production and distribution, synchronization and licensing, music submissions, marketing and publicity, and attaining relevant goals.

MTEC 292: Internship Studies
Units: 0.5-14
Prerequisites: None
Corequisite: Complete 54 hours of work per unit, paid or unpaid.
Enrollment Limitation: Instructor, dept chair, and Career Center approval. Fourteen unit maximum in any combination of work experience education and/or internship studies per semester.
Acceptable for Credit: CSU
Course Typically Offered: Fall, Spring, and Summer

This course provides students the opportunity to apply the theories and techniques of their discipline in an internship position in a professional setting under the instruction of a faculty-mentor and site supervisor. It introduces students to aspects of the roles and responsibilities of professionals employed in the field of study. Topics include goal-setting, employability skills development, and examination of the world of work as it relates to the student's career plans. Students must develop new learning objectives and/or work/intern at a new site upon each enrollment.

MTEC 299: Occupational Work Experience Education
Units: 0.5-14
Prerequisites: None
Corequisite: Complete 54 hours of work per unit, paid or unpaid.
Enrollment Limitation: Career Center approval. Fourteen unit maximum in any combination of work experience education and/or internship studies per semester.
Acceptable for Credit: CSU
Course Typically Offered: Fall, Spring, and Summer

This course is intended for students who are employed in a job directly related to their major or career area of interest. It allows such students the opportunity to apply the theories and skills of their discipline to their position and to undertake new responsibilities and learn new skills at work. Topics include goal-setting, employability skills development, and examination of the world of work as it relates to the student's career plans. Students must develop new learning objectives and/or work/intern at a new site upon each enrollment.