

# RECORDING ARTS & TECHNOLOGY (RAT)

## **RAT-1100 Sound Recording and Design 3 Credits**

Introduction to theory of sound and recording process for media production. Topics include principles of sound and hearing, audio terminology, recording equipment operation, storage mediums and recording techniques for location and studio applications. For students interested in audio for video, television, film, and digital media arts.

*Lecture: 1 hour. Laboratory: 4 hours*  
*Prerequisite(s): Departmental approval.*

## **RAT-1160 Making Independent Recordings 3 Credits**

Basic guide to making and selling independent recordings. Topics include operation of record companies, recording procedures, planning, budgets, copyrights, publishing, graphics and printing, manufacturing process, promotion and sales strategies, and setting up your own small business.

*Lecture: 3 hours*  
*Prerequisite(s): None.*

## **RAT-1210 Studio Lab Band 3 Credits**

The study of musical and technical skills used by instrumentalists and vocalists to create successful studio recordings. Class will record contemporary and classic Rock, Rhythm & Blues, Country and Blues songs.

*Lecture: 2 hours. Laboratory: 2 hours*  
*Prerequisite(s): Departmental Approval: by audition.*

## **RAT-1300 Introduction to Recording 3 Credits**

Introduction to theory of sound and recording process. Study of audio terminology, principles of sound and hearing, basic equipment, recorder operation, analog and digital signal storage methods.

*Lecture: 3 hours*  
*Prerequisite(s): ENG-1010 College Composition I or ENG-101H Honors College Composition I, and MATH-1000-level MATH course or higher, and MUS-1010 Survey of European Classical Music, or MUS-1020 Survey of Jazz, or MUS-1030 Survey of Rock and Roll, or MUS-1040 Survey of African-American Music, or MUS-1050 Survey of World Music, and concurrent enrollment in RAT-1311 Studio Operations, and departmental approval: admission to program admission to program.*

## **RAT-1311 Studio Operations 3 Credits**

Theory and practical applications of the recording studio. Topics include equipment setup and interface, small console signal flow and operating levels, patch bays, studio documentation, basic voice and commercial recording, editing and mixing techniques.

*Lecture: 1 hour. Laboratory: 4 hours*  
*Prerequisite(s): ENG-1010 College Composition I, or ENG-101H Honors College Composition I, and MATH 1000-level or higher, and MUS-1010 Survey of European Classical Music, or MUS-1020 Survey of Jazz, or MUS-1030 Survey of Rock and Roll, or MUS-1040 Survey of African-American Music, or MUS-1050 Survey of World Music, and concurrent enrollment in RAT-1300 Introduction to Recording, and departmental approval.*

## **RAT-1320 Audio Transducers 3 Credits**

Theory, characteristics and operation of various microphone types, loudspeakers, crossovers and speaker/room monitoring considerations.

*Lecture: 1 hour. Laboratory: 4 hours*  
*Prerequisite(s): RAT-1300 Introduction to Recording, and RAT-1311 Studio Operations, or departmental approval.*

## **RAT-1400 Concert Promotion 3 Credits**

This Course is a basic guide to concert promotion. Topics include concert planning, organization, partnering, booking, sponsorships, contracts, unions, radio, press, television, street teams, flyers, budgets, graphics, printing, promotion and sales strategies, performance rights organizations, insurance, security, governmental regulations, and setting up your own small business. Students will work as a team to produce an actual concert or concert series.

*Lecture: 2 hours. Laboratory: 2 hours*  
*Prerequisite(s): None*

## **RAT-1500 Recording Theory I 3 Credits**

Introduction to practical techniques of multi-track recording. Session operating procedures, multiple microphone placement, track assignment, overdubbing, mixdown, and console and recorder operation included.

*Lecture: 3 hours*  
*Prerequisite(s): RAT-1320 Audio Transducers, and RAT-1311 Studio Operations; and concurrent enrollment in RAT-1511 Recording Lab I, and departmental approval.*

## **RAT-1511 Recording Lab I 2 Credits**

Practical applications of analog and digital theory and techniques covered in Recording Theory I. Student will record and mix multi-track music and audio for video projects in a professional studio environment.

*Laboratory: 6 hours*  
*Prerequisite(s): RAT-1311 Studio Operations, and RAT-1320 Audio Transducers, or concurrent enrollment; and concurrent enrollment in RAT-1500 Recording Theory I, and departmental approval.*

## **RAT-1520 Audio Signal Processing 3 Credits**

Theory and operation of audio processing equipment. Introduction to entire range of studio effects devices including equalizers, variable gain amplifiers including compressors, limiters, gates and expanders, analog and digital delays and reverberation.

*Lecture: 1 hour. Laboratory: 4 hours*  
*Prerequisite(s): RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I or concurrent enrollment, or departmental approval.*

## **RAT-1530 Digital Audio Theory 3 Credits**

Theory, methods and practical applications of current digital recording systems. Includes tape and disc-based recorders, operating system installation and maintenance, data storage methods, recording, editing and digital signal processing, and integration of digital recording equipment into modern studio environment. Student will demonstrate fundamental proficiencies in current digital recording methods and procedures.

*Lecture: 1 hour. Laboratory: 4 hours*  
*Prerequisite(s): RAT-1300 Introduction to Recording, RAT-1311 Studio Operations, and MUS-1130 MIDI Technology I, and departmental approval.*

### **RAT-1600 Concert Technical Production**

#### **3 Credits**

Concert Technical Production is a comprehensive applied study of all aspects of venue and show production. Topics include production, lighting, sound, staging, personnel, stage management, stagehand training, touring road crew protocol, venue load in/load out procedures and musical instrument technical support at live music events. Students will apply above principles in weekly labs at live music concerts.

*Lecture: 1 hour. Laboratory: 4 hours*

*Prerequisite(s): None.*

### **RAT-1816 Special Topics: Talent and Entertainment Booking**

#### **3 Credits**

Provides a basic guide to talent and entertainment booking. Topics include booking, contracts, scheduling, organization, sales strategies, talent agencies, databases, partnering, governmental regulations, using Internet technology and setting up your own booking business. Students must have a working knowledge of computers and the Internet.

*Lecture: 2 hours. Laboratory: 2 hours*

*Prerequisite(s): None.*

### **RAT-1820 Independent Study/Research in Recording Arts Technology**

#### **1-3 Credits**

Directed individual study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

*Lecture: 1-3 hours*

*Prerequisite(s): Departmental approval, and instructor approval, and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.*

### **RAT-2300 Recording Theory II**

#### **3 Credits**

Continuation of practical techniques of recording. Topics include intermediate recording and mixing theory, recording techniques, critical listening and intermediate ear training.

*Lecture: 3 hours*

*Prerequisite(s): RAT-1320 Audio Transducers, RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I, and concurrent enrollment in RAT-2310 Recording Lab II, or departmental approval.*

### **RAT-2311 Recording Lab II**

#### **2 Credits**

Practical applications of theory and techniques covered in Recording Theory. Student will produce, record and mix various styles of musical and audio for video projects. Includes human relations and talent management.

*Laboratory: 6 hours*

*Prerequisite(s): RAT-1320 Audio Transducers, and RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I; and concurrent enrollment in RAT-2300 Recording Theory II.*

### **RAT-2330 Digital Audio Mixing**

#### **3 Credits**

Advanced applications of digital audio recording, editing and mixing using current digital console and non-linear workstation environments. Topics include virtual console basics, digital signal processing, plug-ins, digital signal routing, digital automation basics, file interchange and basic project mastering techniques.

*Lecture: 1 hour. Laboratory: 4 hours*

*Prerequisite(s): RAT-1530 Digital Audio Theory, or department approval.*

### **RAT-2341 Location Recording**

#### **2 Credits**

Techniques used in non-studio recording for news gathering, conference, public speaking, music and sound effects recording. Main emphasis will be hands-on, and students will record, edit and mix a variety of location projects.

*Lecture: 1 hour. Laboratory: 3 hours*

*Prerequisite(s): RAT-1320 Audio Transducers, or departmental approval.*

### **RAT-2440 Sound for Theatre**

#### **3 Credits**

Introduction to the essentials of theatrical sound. Topics covered include microphone use, microphone placement, amplification, theatrical acoustics, Foley sound, recorded effects, and production methodology.

*Lecture: 2 hours. Laboratory: 2 hours*

*Prerequisite(s): THEA-1430 Introduction to Scenery and Stagecraft, and RAT-1300 Introduction to Recording, and RAT-1310 Studio Operations.*

### **RAT-2540 Live Sound Reinforcement**

#### **3 Credits**

Theory and operation of various live sound reinforcement systems. Includes acoustics, system setup, signal flow, mixing consoles, microphones, signal processing, amps, crossovers and speaker systems.

*Lecture: 1 hour. Laboratory: 4 hours*

*Prerequisite(s): RAT-1320 Audio Transducers, or department approval.*

### **RAT-2814 Special Topics: Internet Radio Production I**

#### **3 Credits**

Principles of modern radio broadcasting with an emphasis on basic skills needed to operate in a broadcast setting. Topics include the historical context of radio and its role in society, scripting skills for broadcast, interview and on-air voice techniques, and recording and production skills needed for internet-based radio broadcasting.

*Lecture: 1 hour. Laboratory: 4 hours*

*Prerequisite(s): RAT-1311 Studio Operations or MJS-1011 Introduction to Mass Communications; or departmental approval.*

### **RAT-2820 Advanced Independent Study/Research in Recording Arts Technology**

#### **1-3 Credits**

Directed individual advanced study. Study/research title and specific content arranged between instructor and student. May be repeated for a maximum of six credits of different topics.

*Lecture: 1-3 hours*

*Prerequisite(s): Departmental approval, and instructor approval, and ENG-0995 Applied College Literacies, or appropriate score on English Placement Test. Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.*

### **RAT-2940 Audio Recording Field Experience**

#### **1-2 Credits**

Cooperative effort between the College and local and national audio-related businesses to provide students with work experience in industry setting. Student, instructor and internship supervisor will develop and implement an "Individual Field Experience Training Plan" which includes general responsibilities, and a training sequence designed to maximize hands-on industry training under actual working conditions.

*Other Required Hours: Field Experience: 12 to 24 hours per week.*

*Prerequisite(s): RAT-1520 Audio Signal Processing, and RAT-2300 Recording Theory II, and RAT-2311 Recording Lab II, and RAT-2330 Digital Audio Mixing, and RAT-2341 Location Recording, and departmental approval.*

**RAT-2990 Recording Arts & Tech Capstone****3 Credits**

Capstone course in Recording Arts and Technology. Student will design and implement capstone recording project that applies the technical, oral, behavioral and written skills learned in previous RAT coursework, resulting in cumulative evaluation of student recording skills based on established RAT standards. Includes discussion of emerging audio technologies and their impact on recording industry career opportunities.

*Lecture: 1 hour. Laboratory: 4 hours*

*Prerequisite(s): RAT-1520 Audio Signal Processing, and RAT-2300 Recording Theory II, and RAT-2311 Recording Lab II, and RAT-2330 Digital Audio Mixing, and RAT-2341 Location Recording, and departmental approval.*