

RAT-2300: RECORDING THEORY II

Cuyahoga Community College

Viewing: RAT-2300 : Recording Theory II

Board of Trustees:

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Academic Term:

2016-08-22

Subject Code

RAT - Recording Arts & Technology

Course Number:

2300

Title:

Recording Theory II

Catalog Description:

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

Credit Hour(s):

3

Lecture Hour(s):

3

Requisites

Prerequisite and Corequisite

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.

Outcomes

Course Outcome(s):

Assess needs and prepare thorough pre-production plans for an audio recording project.

Objective(s):

1. Describe elements of appropriate reference material recordings.
2. Describe talent logistics for project.
3. Summarize elements that contribute to initial digital audio workstation session files for project.
4. Identify type of studio needed for project work.
5. Explain scratch track recording for project.
6. Explain microphone input sheets for project recording session dates.
7. Recognize song instrumentation in recorded material.
8. Describe song arrangement for project.
9. Identify elements of basic music chord/lyric charts for project.
10. Distinguish between project tempos.

Course Outcome(s):

Listen to and critique recorded music.

Essential Learning Outcome Mapping:

Written Communication: Demonstrate effective written communication for an intended audience that follows genre/disciplinary conventions that reflect clarity, organization, and editing skills.

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. Analyze elements that contribute to volume balance of a recording.
 2. Analyze elements that contribute to panning balance of a recording.
 3. Analyze elements that contribute to frequency balance of a recording.
 4. Analyze elements that contribute to the dimension of a recording.
 5. Analyze elements that contribute to the dynamics of a recording.
 6. Analyze elements that contribute to the interest of a recording.
 7. Analyze emotional content of content within a recording.
 8. Explain theories used to correct the listening environment.
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Course Outcome(s):

Follow and create music notation charts.

Objective(s):

1. Identify pitch on a music chart.
 2. Identify rhythmic notation on a music chart.
 3. Identify meter and tempo on a music chart.
 4. Differentiate between intervals on a music chart.
 5. Demonstrate transposing.
 6. Demonstrate Nashville number system.
 7. Identify chart symbols on a music chart.
 8. Identify song structure.
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Course Outcome(s):

Model effective professional interaction/etiquette in a professional group setting.

Objective(s):

1. Explain reliability to other project team members.
 2. Explain punctuality with other project team members, talent and studio personnel.
 3. Explain preparedness with other project team members, talent and studio personnel.
 4. Distinguish between both positive and negative criticism.
 5. Explain importance of leaving studio in a clean and organized fashion for the next client.
 6. Identify components of effective invoices.
 7. Describe group member roles for the project.
 8. Explain effective collaboration techniques with other project team members.
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Course Outcome(s):

Arrange and conduct a studio recording session in a professional environment.

Objective(s):

1. Explain components of proper documentation needed to schedule studio time for project recording session dates.
 2. Explain components of proper documentation needed to acquire equipment from studio for project recording session dates.
 3. Summarize appropriate microphone setup technique for project recording session dates.
 4. Explain methods of talent scheduling.
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Course Outcome(s):

Operate commonly found outboard studio equipment during recording and mixing session dates.

Objective(s):

1. Recognize effective use of dynamics based processors.
 2. Recognize effective use of outboard microphone pre-amps.
 3. Review effective use of studio headphone system.
 4. Review effective use of microphone stands.
 5. Review effective use of gobos in the studio setting.
 6. Review effective use of D.I. boxes in the studio.
 7. Recognize effective use of time-based processors.
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Course Outcome(s):

Operate digital audio workstations in a professional studio environment.

Objective(s):

1. Explain software session file set up hardware calibration techniques.
 2. Explain D.A.W. track creation and naming within software.
 3. Summarize click track settings within software.
 4. Describe use of arrangement markers in software.
 5. Describe use track color-coding to differentiate tracks within the project.
 6. Explain internal routing and signal flow within D.A.W. and connected hardware interface.
 7. Summarize elements of acceptable tracks used for comping finished tracks from multiple takes.
 8. Explain editing techniques required for timing correction of recorded tracks.
 9. Describe professional session backup techniques.
 10. Explain methods to use tuning software to enhance a project.
 11. Explain methods to use amp simulation software to enhance a project.
 12. Explain methods to use sound replacement software to enhance a project.
 13. Describe professional file management and session naming conventions.
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Course Outcome(s):

Operate both digital and analog recording consoles in a professional studio environment.

Objective(s):

1. Review proper large format console monitor path configuration and gain structure techniques.
 2. Review proper large format console cue/talkback configuration and gain structure techniques.
 3. Review proper console documentation procedure.
 4. Identify proper console "zeroing" techniques.
 5. Review proper large format console input path configuration and gain structure techniques.
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Course Outcome(s):

Record audio for multi-track music projects in a professional studio environment.

Objective(s):

1. Classify between types of instruments amps that enhance the project.
 2. Summarize between music instrument recording techniques that enhance the project.
 3. Summarize between vocal recording techniques that enhance the project.
 4. Identify between acceptable and non-acceptable tracking levels.
 5. Identify between acceptable and non-acceptable instrument tuning.
 6. Identify between acceptable and non-acceptable instrument timing.
 7. Explain stereo layback recordings.
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Course Outcome(s):

Mix audio for multi-track music projects in a professional studio environment.

Objective(s):

1. Explain rough mix, cue mix, final mix and alternate mix creation.
 2. Indicate elements that contribute to the volume balance of a mix.
 3. Indicate elements that contribute to the frequency balance of a mix.
 4. Indicate elements that contribute to mix dynamics.
 5. Explain appropriate and non-appropriate use of time-based processors.
 6. Explain appropriate and non-appropriate use of dynamics based processors.
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Course Outcome(s):

Prepare and deliver a finished audio product.

Objective(s):

1. Describe elements that contribute to the pleasing appearance of a deliverable product.
 2. Explain attributes of a deliverable that plays back on outside sound systems.
 3. Describe elements of proper documentation and liner notes of deliverable product.
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Methods of Evaluation:

1. Written/Blackboard exams covering assigned reading and lecture material
2. Worksheet/Blackboard assignments

3. Written critical listening assignments
4. Participation

Course Content Outline:

1. Project Preproduction
 - a. Choosing Reference material
 - b. Choosing Song arrangement/instrumentation/chords/lyrics/tempo
 - c. Talent logistics
 - d. Pre session documentation-mic input sheets/studio layout
 - e. Preparing DAW project file
 - f. Recording scratch tracks
 - g. Choosing appropriate studio for project needs
2. Studio etiquette in the professional setting
 - a. Session roles
 - b. Effective collaboration techniques
 - c. Reliability
 - d. Punctuality
 - e. Preparedness
 - f. Positive and negative criticism
 - g. Invoice numbering, dating, work description and rates
3. Effective session management
 - a. Scheduling talent
 - b. Scheduling studio time
 - c. Equipment rental
 - d. Mic setup and technique
 - e. Wrapping up sessions
4. Outboard studio equipment use during sessions
 - a. Time-based processors
 - b. Dynamics processors
 - c. External mic pre amps
 - d. Studio headphone systems
 - e. Microphone stands
 - f. Gobos
 - g. Direct Injection (D.I.) boxes
5. Digital Audio Workstations
 - a. File Management & Naming
 - b. Session file setup and hardware calibration
 - c. Session markers and track color coding
 - d. Internal routing and signal flow
 - e. Track comping
 - f. Editing for timing correction
 - g. Sound replacement
 - h. Amplifier simulation
 - i. Session backup and archiving
6. Analog and digital console efficiency
 - a. Monitor path
 - b. Input path
 - c. Cue send and talkback
 - d. Recall documentation
 - e. Reset to zero
7. Multi-track recording
 - a. Choosing the appropriate instruments and amplifiers
 - b. Advanced electric and acoustic recording techniques
 - c. Advanced vocal recording techniques
 - d. Tracking levels
 - e. Instrument tuning
 - f. Instrument and track timing
 - g. Stereo layback

8. Multi-track mixing
 - a. Rough mixes
 - b. Cue mixes
 - c. Final mixes
 - d. Alternate mixes
 - e. Mix volume balance
 - f. Mix frequency balance
 - g. Mix dynamics
 - h. Time-based processing
 - i. Dynamics based processing
9. Final product presentation
 - a. Appearance
 - b. Playability
 - c. Supporting notes and documentation
10. Critical Listening
 - a. Mix volume balance
 - b. Mix panning balance
 - c. Mix frequency balance
 - d. Mix dimension
 - e. Mix dynamics
 - f. Mix interest
 - g. Mix emotion
 - h. The listening environment
11. Music reading skills
 - a. Song structure
 - b. Pitch
 - c. Rhythmic notation
 - d. Meter and tempo
 - e. Intervals
 - f. Transposing
 - g. Nashville number system
 - h. Chart symbols

Resources

Bartlett, Bruce and Bartlett, Jenny. *Practical Recording Techniques The Step-by-Step Approach to Professional Audio Recording*. 6th Ed. New York, NY: Focal Press, 2013.

Owsinski, Bobby. *The Mixing Engineer's Handbook*. 3rd Ed. Boston, MA: Cengage Learning, 2014.

Gibson, David. *The Art of Mixing: A Visual Guide to Recording, Engineering, Production*. 2nd Ed. Boston, MA: Cengage Learning, 2005.

Huber, David Miles, and Runstein, Robert E. *Modern Recording Techniques*. 8th Ed. New York, NY: Focal Press, 2014.

Owsinski, Bobby. *The Recording Engineer's Handbook*. 3rd Ed. Boston, MA: Cengage Learning, 2014.

Moulton, David. *Total Recording: The Complete Guide to Audio Production*. 1st Ed. Sherman Oaks, CA: KIQ Productions, 2000.

Senior, Mike. *Recording Secrets for the Small Studio*. 1st Ed. New York, NY: Focal Press, 2015.

Owsinski, Bobby. *The Mixing Engineers Handbook*. 3rd Ed. Boston, MA: Cengage Learning, 2014.

Senior, Mike. *Mixing Secrets for the Small Studio*. 1st Ed. New York, NY: Focal Press, 2011.

Corey, Jason. *Audio Production and Critical Listening: Technical Ear Training*. 1st Ed. New York, NY: Focal Press, 2010.

Everest, F. Alton. (2006) *Critical Listening Skills for Audio Professionals*, Boston, MA: Cengage Learning.

Everest, F. Alton, and Pohlmann, Ken. (2014) *Master Handbook of Acoustics*, New York, NY: McGraw-Hill Education.

Gervais, Rod. (2010) *Home Recording Studio Build it Like the Pros*, Boston, MA: Cengage Learning PTR.

Resources Other

1. RAT-2311 Instructor Blackboard Site, consisting of equipment operation manuals, reprints, data sheets, etc.
2. Student reference headphones
3. www.soundonsound.com
4. www.aes.org
5. www.recordingmag.com
6. www.mixonline.com
7. www.cambridge-mt.com/MikeSenior
8. www.therecordingrevolution.com
9. www.gearslutz.com
10. www.gikacoustics.com
11. www.prosoundweb.com
12. www.music.tutsplus.com
13. www.musicradar.com
14. www.tobyrush.com
15. www.arqen.com/acoustics-101
16. www.recordingology.com

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