RAT-1520: AUDIO SIGNAL PROCESSING

Cuyahoga Community College

Viewing: RAT-1520 : Audio Signal Processing
Board of Trustees:
2016-05-26

Academic Term:
2016-08-22

Subject Code
RAT - Recording Arts & Technology

Course Number:
1520

Title:
Audio Signal Processing

Catalog Description:
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.

Credit Hour(s):
3

Lecture Hour(s):
1
Lab Hour(s):
4

Requisites

Prerequisite and Corequisite
RAT-1500 Recording Theory I, and RAT-1511 Recording Lab I or concurrent enrollment, or departmental approval.

Outcomes

Course Outcome(s):
N/A

Objective(s):
1. A. Demonstrate use of various equalizer types.
2. B. Demonstrate use of compressors, limiters, gates and expanders.
3. C. Demonstrate use of various delay types.
4. D. Demonstrate use of reverbs.

Methods of Evaluation:
1. Written theory exam in each topic area
2. Lab practical exam in each topic area
3. Participation and discussion
4. Attendance in lectures and labs

Course Content Outline:
1. Equalizers
    a. Equalizer terminology
    b. Equalizer curves
    c. Equalizer types
    d. Bandpass filters

     e. Notch filters
     f. Sweep filters
     g. Parametric equalizers
     h. Graphic equalizers
     i. Musical instrument frequency characteristics
2. Variable gain amplifiers (VGA)
     a. VGA theory
     b. Threshold
     c. Ratio
     d. Attack and release times
     e. Compressors
     f. Limiters
     g. Noise gates
     h. Expanders
     i. External keying
     j. VGA applications
3. Delays
     a. Analog delay
     b. Digital delay
     c. Tape delay
     d. Delay controls
     e. Delay applications
     f. Chorusing
     g. Doubling
     h. Tape delay applications
     i. Tempo dependent delay
     j. Delay effects
     k. Reverb pre-delay
4. Reverberation
5. \rReverb terminology
6. \rReverb types
7. \rReverb parameters
8. \rReverb applications
9. \rMultiple reverbs in mixing
10. \rMulti-effects devices

Resources

Bartlett, Bruce and Bartlett, Jenny. *Practical Recording Techniques.* 2nd. Boston: Focal Press, 1998.

Huber, David M. and Runstein, Robert E. *Modern Recording Techniques.* 4th. Indianapolis: Sams, 1994.

White, Paul, ed. *Basic Effects and processors.* ondon: Sanctuary Publishing Ltd, 2000.

Resources Other
1. Shaping your Sound Video Series. Lom Lubin. First Light Publishing, 1990.
2. RAT-1520 Course Learning Pack.

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