

RAT-1530: DIGITAL AUDIO THEORY

Cuyahoga Community College

Viewing: RAT-1530 : Digital Audio Theory

Board of Trustees:

2016-05-26

Academic Term:

2016-08-22

Subject Code

RAT - Recording Arts & Technology

Course Number:

1530

Title:

Digital Audio Theory

Catalog Description:

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.

Credit Hour(s):

3

Lecture Hour(s):

1

Lab Hour(s):

4

Requisites

Prerequisite and Corequisite

RAT-1300 Introduction to Recording, RAT-1311 Studio Operations, and MUS-1130 MIDI Technology I, and departmental approval.

Outcomes

Course Outcome(s):

Demonstrate fundamental proficiency in current digital recording methods & procedures.

Objective(s):

1. Explain digital recording principles.
2. Describe digital recording system components.
3. Demonstrate digital recording techniques.
4. Apply digital recording techniques.
5. Complete digital recording projects.

Methods of Evaluation:

1. Worksheet assignments
2. Midterm and final written exams
3. Lab practical exam
4. Recording and editing projects
5. Attendance at lectures and labs

Course Content Outline:

1. Digital recording systems
 - a. Hardware
 - i. system types
 - ii. processing speeds
 - iii. RAM requirements
 - iv. processing cards
 - v. interface units
 - vi. peripheral components
 - b. Software
 - i. computer operating system installation and maintenance
 - ii. application installation/de-installation
 - iii. application operation
 - iv. file management
 - c. storage and retrieval
 - i. hard-disk media formats
 - ii. hard-disk configuration
 - iii. bit structure
 - iv. Analog to Digital/Digital to Analog (AD/DA) conversion
 - v. sample rate conversion
2. Recording, editing & digital signal processing (DSP)
 - a. Recording and editing techniques
 - i. destructive/non-destructive editing
 - ii. crossfades
 - iii. edit points
 - iv. playlist editing
 - v. digital signal processing (DSP)
 - vi. time compression/expansion
3. Digital recording applications
 - a. Digital studio equipment audio connections
 - b. Digital studio music instrument digital interface (MIDI) interface
 - c. Digital console operation
 - d. Student projects
 - i. music editing
 - ii. sound effects recording and editing
 - iii. narration recording and editing
 - iv. commercials

Resources

Alten, Stanley R. *Audio in Media*. 10th. Boston: Wadsworth Cengage Learning, 2014.

White, Paul. *Desktop Digital Studio*. 1st. London: Sanctuary Publishing Ltd., 2000.

Cook, Frank D. *Pro Tools 101: An Introduction to Pro Tools 11, Avid Learning Series*. Boston: MA: Cengage Learning, 2013.

Cook, Frank D. *Pro Tools 110, Official Courseware, Pro Tools Production I*. 8 th ed. Boston: MA: Cengage Learning, 2010.

Resources Other

1. AES: journal of the Audio Engineering Society. New York. www.aes.org.
2. EQ New York-United Entertainment Media, Inc. www.eqmag.com
3. Mix Magazine. Emoryville, CA: INTERTEC/PRIMEDIA Publication. www.mixonline.com.
4. Pro Sound News. New York: United Entertainment Media, Inc. www.prosoundnews.com
5. RAT-1530 Course Learning Pack.
6. Recording. Boulder: Musicmaker Publications. www.recordingmag.com.
7. Studio Sound. London: United Business Media. www.proaudio.studio-sound.com.

Top of page
Key: 3903