

# MTEC 72A: PRODUCING MUSIC WITH REASON

## Foothill College Course Outline of Record

Heading	Value
<b>Effective Term:</b>	Summer 2021
<b>Units:</b>	4
<b>Hours:</b>	3 lecture, 3 laboratory per week (72 total per quarter)
<b>Advisory:</b>	Not open to students with credit in MUS 66B.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

## Description

Creating and editing digital audio with Pro Tools and Reason. Introduction to Reason's virtual instruments including Dr. Rex, Subtractor, Malstrom, Thor, Redrum and NN-Xt. Songwriting, musical composition, and the basic elements of music (pitch, rhythm, harmony, style and form) as they relate to contemporary music. Introduction to synthesis and digital sampling techniques.

## Course Objectives

The student will be able to:

- A. Describe and discuss the principles of digital sampling and signal processing.
- B. Evaluate and interpret musical sound as a guide to the creation and editing of samples.
- C. Explain the principles of, and apply signal processing to original samples.
- D. Organize a digital music ensemble integrating synthesizers, drum machines, samplers and signal processors using a Macintosh computer as a control device.

## Course Content

- A. Study and analysis of sampling.
  1. Digital sampling.
    - a. Sampling thresholds and the Nyquist frequency.
    - b. Looping.
    - c. Layering and multisampling.
- B. Study of signal processors.
  1. Equalization.
  2. Reverb and delay.
  3. Chorus and flanging.
  4. Pitch following.
- C. Intermediate MIDI applications.
  1. Software based sequencers.

## Lab Content

- A. MIDI.
  1. Implementation and drivers.

2. Velocity and aftertouch.
3. Multiple routing assignments.
- B. Virtual instruments.
  1. Layering.
  2. Volume matching.
  3. Panning.
- C. Audio.
  1. Tempo matching via time compression expansion.
  2. Elastic Audio.
- D. ReWire.
  1. ReWiring secondary applications via insert tracks and bus assignments.
  2. Plug in applications using internal busses affecting external applications.

## Special Facilities and/or Equipment

- A. When taught on campus:
  1. 31 Macintosh computers, MIDI keyboards and MIDI interfaces.
  2. 31 Avid Pro Tools systems.
  3. Video projector and screen.
  4. 31 Reason software installs.
- B. When taught via Foothill Global Access:
  1. On-going access to computer with email software and capabilities.
  2. Email address.
  3. JavaScript enabled internet browsing software.

## Method(s) of Evaluation

Graded lab assignments in the operation of samplers, signal processors and MIDI sequencers  
 Tests on creating, looping, editing and mixing samples of acoustic and digital devices to an industry standard  
 Preparing digital sequences from a set of specifications for application in a MIDI environment, and evaluated from those specifications  
 Written assignments on the principles of sampling

## Method(s) of Instruction

Lecture presentations that demonstrate the features of Reason software  
 Classroom discussions that address the history of hardware synthesizers and the evolution of hardware emulation with Reason software  
 Group presentations followed by in-class discussion and evaluation

## Representative Text(s) and Other Materials

Chagnon, Zac. [Audio Production Basics with Reason Software](#). 2020.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- A. Written critiques and analyses of audio production projects including albums, soundtracks, television, video games and internet multimedia.
- B. Written summaries documenting technical and artistic elements for corresponding submitted assignments and audio projects.
- C. Written proposals, session logs, learning outcomes and reflections supporting submitted musical works and final master recordings.

## Discipline(s)

Commercial Music