MUSC 190 - DIGITAL MUSIC COMPOSITION I

I. Basic Course Information

A. Course Number and Title: MUSC 190: DIGITAL MUSIC COMPOSITION I

B. New or Modified Course: modified

C. Date of Proposal: Semester: Fall Year: 2014

D. Sponsoring Department: Visual and Performing Arts

E. Semester Credit Hours: 3

F. Weekly Contact Hours: 4 Lecture 2
                                             Laboratory 2

G. Prerequisites: none

H. Laboratory Fees: Yes

I. Department Chair: Dennis Russo, Co-Chair, Performing Arts
                   (908) 526-1200 x8391, drusso@raritanval.edu

II. Catalog Description

This course is an introduction to the use of computers and MIDI (Musical Instrument Digital Interface), using software sequencing and software synthesizers to compose, record, edit, and perform music. Aspects of MIDI, digital audio and acoustics will be studied, as well as the fundamentals of synthesizer programming. (Students will be required to supply their own headphones – ¼” jack)

III. Statement of Course Need

A. Synthesizers and the musical application of computers through the use of MIDI, digital recording, and the manipulation of digital audio have revolutionized the music industry. The demand for trained and experienced musicians in this field is high. This course satisfies the needs of the novice electronic musician and provides an introduction to many areas of today’s rapidly evolving musical technology. Music majors are encouraged to consider this course as an elective, relevant to their studies in theory and composition.

B. This course is taught in A-09B, our digital composition and music lab, equipped with
computer stations and appropriate musical technologies and software.
C. Course transferability: Based on evaluations by the njtransfer.org website, this course transfers to most Associate and Bachelor programs as an equivalent music course in Music or Fine Arts. Kean University, Montclair State University, City University, Rowan University, and William Paterson University have similar courses.

IV. Place of Course in College Curriculum

A. Free elective
B. The course serves as a VAPA elective for AFA Music.
C. To see course transferability for New Jersey colleges and universities, go to the NJ Transfer website, www.njtransfer.org; for other colleges and universities, go to the individual college website.

V. Outline of Course Content

A. MIDI Basics
   1. MIDI Defined
      a. history and purpose
      b. MIDI connections
   2. Advantages and Limitations of the MIDI protocol
   3. MIDI Messages
      a. Channel Voice messages
      b. Control Change messages
   4. General MIDI
   5. MIDI files
B. Equipment for digital composition
   1. Computer platforms
   2. Software
      a. Digital audio workstations
      b. Software synthesizers
      c. Plug-in effects and instruments
   3. Hardware
      a. Soundcards
      b. RAM and memory
      c. Internal and external storage
C. Acoustics
   1. Basic elements of Acoustics
      a. Frequency
      b. Amplitude
      c. Duration
      d. Timbre
D. Digital Audio
   1. Digital Audio Defined
      a. Sampling Rate
      b. Bit depth
c. the Nyquist Frequency
d. CD quality digital audio

E. Software Synthesis
1. Basic types of synthesis
2. Synthesizer basics
   a. Oscillator
   b. Filters
   c. Envelopes
   d. Low Frequency Oscillators (LFOs)

F. Audio effects and signal processing
1. Send effects
2. Insert effects
3. Effect types
   a. Characteristics and purpose
   b. Application of effects

G. Sequencing with a PC
1. Audio Connections
2. Main sections of the sequencing software
3. Recording, editing, and playing back MIDI information
4. Selecting instruments and patches

H. Compositional Techniques
1. Orchestration and Arranging
2. Pitch and Harmony
3. Rhythm
4. Form
5. Melody
6. Timbre and Texture

I. Producing the final product
1. Mixing digital audio
   a. Equalization
   b. Panning
   c. Volume levels and fades
   d. Applying effects
   e. Mix down to CD quality stereo audio file

VI. General Education Goals and Learning Outcomes

A. General Education Goals:

   Students will:
   demonstrate the applications of various hardware and software technologies,
including MIDI controller, sequencers and synthesizers to the processes and
applications of digital music composition. (GE-NJ 4, 6, *)
B. Learning Outcomes:

Students will be able to:
1. identify and interpret basic concepts related to digital audio.
2. outline and translate the basic concepts of music synthesis.
3. integrate the technological processes required to create, record, orchestrate, mix, edit and store digital compositions.

(* embedded critical thinking)

VII. Modes of Teaching and Learning

A. lecture/discussion
B. small-group work
C. computer-assisted instruction
D. laboratory
E. student oral presentations

VIII. Papers, Examinations, and other Assessment Instruments

A. weekly laboratory work and preparation
B. written examinations or quizzes on factual aspects of the course content
C. composition/arrangement assignments
D. creativity, effort, participation, attendance

IX. Grade Determinants

A. Written exams and/or quizzes
B. Weekly homework
C. Composition, arrangement, orchestration projects
D. Class participation, effort, progress, attendance

X. Texts and Materials

A. Text: None
B. Materials: The students must purchase:
   Headphones (1/4” jack)
   Recordable compact discs

XI. Resources

A. Soundproof studio
B. Computer workstations with professional-quality audio cards
C. Sequencing Software
D. Software synthesizers
E. Compact Disc burning software
F. Playback system