RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

MUSC 165: Music Technology: Fundamentals and Applications

I. Basic Course Information

A. Course Number and Title: MUSC 165: Music Technology: Fundamentals and Applications

B. New or Modified Course: Modified

C. Date of Proposal: Semester: Fall Year: 2025

D. Effective Term: Fall 2026

E. Sponsoring Department: Arts & Design

F. Semester Credit Hours: 3

G. Weekly Contact Hours: 4 Lecture: 2
Laboratory: 2
Out of class student work per week: 5

H. ☒ Prerequisite (s): Music Theory I (MUSC 111) and Keyboard Skills I (MUSC 121) or Permission of Instructor

☐ Corequisite (s):

I. Additional Fees**:** None

II. Catalog Description

Prerequisites: Music Theory I (MUSC 111) and Keyboard Skills I (MUSC121) or permission of instructor. This course is an introduction to the fundamental techniques, equipment, and applications of contemporary music technologies. Computer and internet basics, music-related software, and other electronic instruments will be studied in their applications and potential as tools for education, composition, and performance. Introductory aspects of MIDI (Musical Instrument Digital Interface), acoustic and digital audio and acoustics, music notation, and multimedia applications will be examined. Students will be required to supply their own headphones-1/4" jack).

III. Statement of Course Need

A. This course satisfies the needs of the contemporary music student and the professional musician who may be a novice to the many areas of today's rapidly evolving musical technologies. Various equipment (such as iPods, mp3 players) 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. Word processing, Internet connections (e-mail, HTML, streaming media), multimedia, music notation, and musicianship skills software are among the educational and professional tools relevant to a musician's studies in theory, musicianship, composition, arranging, and performance.

Following this course, music students interested in more detailed and specialized training may continue with courses in theory and composition, MIDI/synthesizing, recording and engineering, multimedia collaborations, publishing, podcasting, etc.

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. This course transfers to most Associate and Bachelor music programs as a program requirement, program elective, or elective dependent upon the transfer institution.

IV. Place of Course in College Curriculum

A. Free elective
B. This course serves as a studio arts elective for AA Liberal Arts Majors
C. This course serves as a program option for the AFA Music degree..
D. 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. PC Basics
   1. Introductory word processing and page layout
   2. E-mail basics
   3. Internet basics: interactive programs, downloads, podcasts, publishing, copyright considerations
   4. Educational software (CD-ROMS, CAI, MacGamut, etc.)
   5. Music notation software (e.g., Sibelius)
   6. Computer hardware and basic MIDI sequencing
   7. Multimedia presentation (Power Point)

B. MIDI Basics
   1. MIDI Defined
   2. Advantages and Limitations of the MIDI protocol

3. MIDI Messages
4. General MIDI

C. Acoustics, Analog and Digital Audio
1. Analog and Digital Audio Defined
2. Basic Acoustics
a. Frequency (Herz)
b. The Fundamental Frequency and Overtones
c. Amplitude
d. Sampling Rate
e. Sampling Resolution
f. Aliasing and the Nyquist Frequency
3. Audio Files (WAV, AIFF, mp3, ogg, wma, rm)

VI. A. Course Learning Outcomes

The student will be able to:

1. process documents applicable to the music professional at the computer (resume, concert program/flyer, homepage).
2. apply computer software for developmental and educational studies in theory, notation, musicianship, composition/arranging and multimedia applications.
3. interpret acoustic concepts related to analog and digital audio.
4. demonstrate the fundamentals and basic applications of music synthesis.
5. search the Internet for career parameters and opportunities.
6. operate various electronic instruments in musical applications. (GE 4,6)

(* embedded critical thinking)

B. Assessment Instruments

1. laboratory/computer work
2. project assignments/homework/critiques
3. written examinations
4. researched presentations

VII. Grade Determinants

A. Completion and assessment of assigned documents and musical projects
B. Evaluation and critiques of researched and project presentations
C. Written examinations
D. Attendance and class participation

Formats, modes and methods that may be used for teaching and learning:

A. Lecture/demonstration
B. Computer-assisted instruction
C. Laboratory group work
D. Student presentations of researched and project assignments

VIII. Texts and Materials

Text: (such as) Experiencing Music Technology, 3rd Edition, David Williams and Peter Webster; Schirmer Books, NY 2006.

(Please note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC bookstore is the sole resource for the most up-to-date information about textbooks.)

Materials: Students must purchase their own:
Headphones (1/4" jack)
Recordable compact discs

IX. Resources

A. Soundproof studio
B. Computer workstations with professional quality audio cards
C. Sequencing Software
D. Software synthesizers
E. Compact Disc burning software
F. Audio Playback system
G. Mp3 Player. Soundproof classroom equipped with piano

X. Check One: ☐Honors Course ☒ N/A