Montgomery County Community College
CIS/ SRT/ MUS 137
The Language of Digital Media
3-2-2

COURSE DESCRIPTION:
This course introduces students to the vocabulary, tools and fundamental techniques of manipulating digital audio and video content. Computer systems make it accessible for new users to take audio and digital information as input, to combine it using custom rules they develop and to produce new kinds of sounds, songs and interactive videos. This course is subject to a course fee. Refer to http://mc3.edu/adm-fin-aid/paying/tuition/course-fees for current rates.

REQUISITES:
*Previous Course Requirements*
None

*Concurrent Course Requirements*
None

| LEARNING OUTCOMES Upon successful completion of this course, the student will be able to: | LEARNING ACTIVITIES | EVALUATION METHODS |
|---|---|---|
| 1. Demonstrate a working knowledge of MIDI, audio and video signals and their manipulation. | Assigned Readings<br>Lecture<br>Student Discussions and/or Presentations<br>Hands-On Lab Exercises<br>Programming Projects Homework Set | Tests or Quizzes<br>Capstone Project |
| 2. Demonstrate effective and creative problem-solving strategies and algorithm designs in a variety of computational settings. | Assigned Readings<br>Lecture<br>Student Discussions and/or Presentations<br>Hands-On Lab Exercises<br>Programming Projects Homework | Tests or Quizzes<br>Program Portfolio<br>Capstone Project |

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| 3. Articulate, both verbally and in writing, critical assessment of the aesthetics of digital media works. | Assigned readings<br>Classroom discussion<br>Peer review<br>Exposure to works of mastery in digital media | Homework Assignments<br>Peer evaluation exercises<br>Design essay documenting the development process |
| 4. Analyze media projects to determine computational, artistic and aesthetic choices used to communicate the creator's vision. | Classroom discussion<br>Assigned readings<br>Review of professional digital media artists' work | Reflection essays<br>Process development essay<br>Oral presentations |

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1. The Nature of Digital Media
    - Introduction to working in a DAW (digital audio workstation)
    - Explanation of MIDI protocol
        - Introduction and explanation of MIDI, MPE, and OSC
    - Basic processing of digitalized video content
    - Analysis of Algorithms underlying audio, MIDI and video effect processing

2. Controlling Digital Media
    - Introduction to syntax of programming languages
    - Algorithms and problem-solving
        - Problem-solving strategies
        - Role of algorithms in the problem-solving process
        - Basic concepts and properties of algorithms
        - Debugging strategies
        - Documenting
    - Fundamental programming constructs
        - Simple input/out (I/O)
        - Conditional and iterative control structures
        - Patches
        - Parameter passing
    - User Interface Design
        - External sensor integration

- Abstraction and Encapsulation
- Integration of digital controllers

3. Fundamentals of Design of Interactive Multimedia Installations
    - Understanding of fundamental music terminology when using an EDI (electronic digital instrument)
    - Introduction to sampling, sequencing, and synthesis
    - Understanding the aesthetic and emotional roles of color, instrumentation, user interface in a multimedia production

LEARNING MATERIALS: Majority of learning materials will be open source and/or instructor developed.

COURSE APPROVAL:

Prepared by: Kendall Martin & Jen Mitlas Date: 1/2020

Provost or designee Compliance Verification:

Victoria L. Bastecki-Perez, Ed.D. Date: 2/12/2020

Provost or designee Compliance Verification: Date: 2/12/2020

*This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.*