

Course Assessment Document for CS 267 Interactive Digital Media

Departmental Outcomes

1. Proficiency in computational thinking
2. Ability to analyze systems at the three levels of computer science: theory, software, and hardware
3. Proficiency in the design and implementation of algorithms using multiple programming languages
4. Ability to apply computational thinking to a diverse set of problems and disciplines
5. Ability to communicate effectively and collaborate with others
6. Ability to adapt to new challenges and computational environments

Course Description

Digital forms of text, sound, images, and video enable rapid communication and manipulation of large amounts of information. Digital sensors provide easy access to information about the environment. Connecting sensors with digital media enables the creation of artistic installations with dynamic narratives that respond to a user's actions. Students will learn to manipulate digital media and collect sensor data using both applications and their own computer programs. By combining the two, they will create their own artistic installation and demonstrate it at the end of the term.

Prerequisites: CS151 or CS 231 or permission of instructor

Rationale for prerequisites: The course requires some experience with programming and either experience with Python (CS 151) or a more advanced programming course (CS 231).

Rationale for Distribution: The course satisfies the A (Art) requirement. Students will be creating their own interactive artistic installation using computers and digital media. During their initial design phase they will explore prior work in artistic interactive installations and engage in critical analysis of their use as an artistic medium.

Desired Course Outcomes

- A. Students gain experience with interactive art and performance and the related critical literature.
- B. Students understand and can implement algorithms for analyzing sensor inputs and generating visual and audio media.
- C. Students demonstrate the ability to design a working artistic installation using standard interactive performance tools
- D. Students work in a group to design an artistic installation.
- E. Students present methods, algorithms, results, and designs in an organized and competently written manner.
- F. Students write, organize, and manage a large software project.

We will disseminate the desired course outcomes to students via the course web page, syllabus and in class.

Course Matrix

Outcome	Activities	Method of Assessment	Departmental Outcome
A	Lectures, assignments	Presentations, reports code assessment	1, 3, 4, 6
B	Lectures, assignments	Presentations, reports code assessment	1, 3, 4, 6
C	Assignments	Presentations, reports code assessment	1, 3, 4
D	Assignments	Presentations, reports	5
E	Assignments	Presentations, reports	5
F	Assignments	Presentations, reports code assessment	3, 6

Grade Calibration Matrix

Outcome	Meaning of the grade A
A	The student demonstrates the use of multiple concepts from prior work and critical analysis of interactive art and performance. The student takes the initiative to explore additional literature and may compare two or more implementations to identify which is more effective.
B	The student successfully implements a working interactive art exhibition that is engaging for the audience.
C	The student demonstrates the use of design tools and the installation goes through multiple iterations of the design process.
D	Work is shared evenly between the members of the group. The group is able to effectively divide the task into parts, each group member completes their task on time and is able to integrate it into the project. Group members communicate effectively and work collaboratively.
E	Reports are well written, concise and clear. The reports clearly describe the algorithms used and show images and figures to support the text. Presentations are clear, use appropriate presentation materials, demonstrate comprehension of the material and are effective at conveying the concepts to their fellow students.
F	The student's code is modular, well-organized, well-commented, and functional. The student makes effective, possibly innovative use of development tools.

Outcome	Meaning of the grade B
A	The student demonstrates the use of at least one concept from prior work or critical theory in the design of their installation. The student may compare two or more implementations of an idea to identify which is more effective.
B	The student successfully implements a working installation that interacts with the audience.
C	The student makes use of standard design methods and the installation goes through at least one iteration in the design process.
D	Work is shared between the members of the group. The group is able to divide the task into parts, and each group member completes their task on time and is able to integrate it into the project. Group members communicate sufficiently to integrate their work.
E	Reports are well written and clear. The reports describe some or all of the algorithms used and use some images and figures to support the text. Presentations are clear, presentation materials are adequate, and the student demonstrates comprehension of most of the material. The presentation conveys the main points to other students in the course.
F	The student's code is modular with a reasonable level of commenting and functional. The student makes use of development tools.

Outcome	Meaning of the grade C
A	The student attempts to make use of at least one concept from prior work or critical theory, but implements the idea partially or incorrectly.
B	The student implements a working installation that may be unstable or contain errors that interfere with the interaction with the audience.
C	The student attempts to make use of standard design methods with little or no iteration in the design process.
D	Work is unevenly shared between the members of the group, possibly duplicated. The group divides the work between members based on which members are likely to finish the work. Not all group members complete their work on time. Group members communicate, but may have difficulty integrating their work.
E	Reports describe the work, but may take the form of a narrative of what went wrong rather than focusing on the algorithms. The reports describe at least the primary algorithm used in the assignment and include at least the required images. The presentations are not well organized and may not contain all of the main points. The presentation materials may be incorrect, insufficient, or hastily created. Students following the presentation may have difficulty following the main points.
F	The student's code is modular and mostly functional, but may lack comments. The student uses development tools, but may not make effective or appropriate use of them.

Outcome	Meaning of the grade D
A	The student designs the installation on their own with little or no reference to prior work or critical analysis.
B	The student implement a partially working installation.
C	The student disregards standard design methods.
D	The student works on their own or is loosely affiliated with another person or group. Group members do not communicate often or effectively and have difficulty integrating code.
E	The student's reports are incomplete or not well written. The report includes the required images but no description of how they were made or their significance. The report contains little information about the algorithms and methods. Presentations are unclear or made without preparation. Presentation materials are poor or missing. Other students in the course have difficulty following the presentation.
F	The student's code is mostly functional, lacks comments, and is not well formatted. The student has a difficult time using development tools.

A student who receives an F does not meet the criteria for a D or any higher grade.