RARITAN VALLEY COMMUNITY COLLEGE
ACADEMIC COURSE OUTLINE

IDMX – 114 Interactive Multimedia

I. Basic Course Information

A. Course Number and Title: **IDMX-114 Interactive Multimedia**

B. New or Modified Course: **Modified**

C. Date of Proposal: Semester: **Fall** Year: **2018**

D. Effective Term: Fall 2019

E. Sponsoring Department: Visual and Performing Arts (VAPA)

F. Semester Credit Hours: **3**

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

H. Prerequisites/Corequisites: **Recommended that student has basic experience with a computer (typing, using a mouse, saving and retrieving files).**

I. Laboratory Fees: **Yes, at current rate.**

J. Name and Telephone Number or E-Mail Address of Department Chair and Divisional Dean at time of approval: **Vandana Nadkarni Vandana.nadkarni@raritanval.edu & John A. Sichel john.sichel@raritanval.edu (Co-Chairs); Patrice Marks patrice.marks@raritanval.edu (Dean of Liberal and Fine Arts)**

II. Catalog Description

Recommended that student has basic experience with a computer (typing, using a mouse, saving and retrieving files). Interactive Multimedia teaches the principles and application of effective interactive communication in a multimedia environment. Topics include multimedia building blocks (text, graphics, animation, sound, and video), hardware, software, and emerging technologies. Student focuses on the final assembly and optimization of various media formats prepared for authoring consumption and presenting that content in linear and hierarchical navigation systems. Students will study concepts related to the design, development, management, usability, and distribution.

III. Statement of Course Need

A. Due to its pervasiveness and ubiquity in this day and age, individuals need some familiarity with how digital multimedia is created and delivered. It spans web sites, internet and television advertising, eLearning, eCommerce, gaming, mobile devices, and all forms of entertainment.

B. A central tool in interactive multimedia is authoring software skills. This course aims to combine the principles of multimedia and interactivity with the learning of the lead authoring software technology and current production standards when the course is held.

C. This course generally transfers as a digital arts or media required course or as elective credit.

IV. Place of Course in College Curriculum

A. Free Elective
B. This course does not serves as a General Education course
C. This course meets a program requirement for:
    a. Interactive Digital Media & Web Development A.A.S. Degree
    b. Interactive Digital Media & Web Development A.S. Degree
    c. Interactive Digital Media & Web Development Certificate
    d. Game Development A.A.S. Degree
    e. Digital Media / Film Studies A.S. Degree
    f. Digital Video Production Certificate
D. This course is a program option for:
    a. Communication Studies Option in Liberal Arts, AA
E. To see course transferability: a) for New Jersey schools, go to the NJ Transfer website, www.njtransfer.org; b) for all other colleges and universities, go to the individual websites.

V. Outline of Course Content

A. Understanding the multimedia authoring production environment.
    1. Types of digital multimedia applications.
    2. Types of digital multimedia roles and skills.
    3. Types of digital multimedia production tasks.
    4. Inventory of mainstream digital media production and authoring tools.
    5. Introduction of the course's authoring tool(s) including its role in the field.
    6. Intellectual Property issues pertaining to Copyright, Trademarks, and Patents.
    7. The role of Design Documentation in the production of multimedia.
B. Basics of preparing, integrating and delivery of digital display typography.
    1. Understanding font terminology including font family.
    2. Embedded fonts versus device fonts
    3. Font optimization and delivery metrics (e.g. byte size).

4. Font readability issues.
5. Font attributes such as color, size and weight.
6. Typography issues between print and display.
7. Demonstration of on how to use the course's authoring tool to create and display text.
8. Lab assignment using the class authoring tool where student creates text content to demonstrate a clear understanding of choice of fonts, font attributes, embedding decisions and optimization.

C. Basics of preparing, integrating and delivery of digital graphics.
    1. Understanding digital graphic media terminology.
    2. Understanding the process of digital graphic media preparation from point of origins to final delivery formats.
    3. The two display graphic technologies bitmap and vector.
    4. Actual graphic design and creation is not a part of this course, however students will learn common tasks often required for integration of content typically supplied.
D. Understanding bitmap graphics
    1. The metrics including color depth and byte size.
    2. Compression issues of bitmap graphics including performance and quality.
    3. The process from acquisition to delivery.
    4. Thorough understanding of converting graphic files formats to JPEG, GIF and PNG (or whatever other major standards that may be in place).
    5. Understanding image resampling and resizing issues.
    6. Class demonstration of basic bitmap graphic final preparation.
        i. Importing of graphic files to graphic editing software.
        ii. Using layers to combine
        iii. Cropping
        iv. Embedding text into graphic.
        v. Exporting to various formats.
        vi. Importing to authoring tool, adding text and setting authoring tool delivery parameters.
    7. Lab assignment to acquire bitmap graphics, combine and layer in graphics tool, export to compressed formats, import to authoring tool for a single page display. …
E. Understanding vector graphics
    1. The metrics of vector graphics.
    2. Understand how vector graphics are rendered by media players.
    3. Conversion to bitmap (rasterization).
    4. Class demonstration of creating vectors. Can be combined with previous media formats. Simple shapes such as for framing other content.
F. Digital sound for multimedia integration.
    1. Understanding terminology.
    2. Types of digital sound formats.
    3. The process from acquisition to delivery.
    4. Encoding for delivery and issues of size, performance and quality.

5. Class demonstration of encoding a raw digital video file such as WAV format into a delivery format such as MP3, use of pre-built player components in authoring tool to play video.
6. Lab assignment to take a sound file, manipulate it with software filters or direct edit the samples, and encode into authoring format.

G. The role of animation in digital media production.
1. Concept of persistence of vision and the impact of the human mind and experience on animation.
2. Animation terminology including frame, key frame and tweening.
3. How software assists animation creation.
4. Metrics of animation including frames per second, speed and duration.
5. How animation impacts the UI design. In other words a button or a menu is an application of animation.
6. Class demonstration of tweening using text and images covered so far in course. Basic templates for movement, resize and alpha change tweens. Multiple layer tweening including tweening starting and ending at different time points. How static (not animated) content works with animated content.
7. Lab assignment to use text, bitmap graphics and vector graphics to create various tween. Tweens include different start and stop points, overlapping tween and static content such as backgrounds.

H. Digital video for multimedia integration.
1. Understanding terminology.
2. Types of digital video formats.
3. The process from acquisition to delivery.
4. Distinctions between embedded, progressive download and streaming delivery.
5. Encoding for delivery and issues of size, performance and quality.
6. Class demonstration of encoding a raw digital video file such as MPEG format into a delivery format, and uploading the video for streaming delivery over the Internet (such as YouTube or Vimeo).
7. Lab assignment to take a digital video file and encode into authoring format. Then use the authoring tool built-in playback component to play video. …

I. User Interface & User Experience (UI/UX).
1. User interface constructs: menus, buttons, hypertext and hyper-graphics.
2. Basic user psychology and user persona building.
3. Class demonstration of creating UI components such as a button, hypertext using the class authoring tool.
4. Lab assignment to create buttons that look like buttons, menu choices, tabs and text.

J. Navigational structures
1. Sketching and development is crucial for navigation design and the overall concept of the design.
2. The types of navigation plans: linear, hierarchical, non-linear, and mixed.
3. Demonstration of linear and hierarchical navigation templates using the course's authoring tool. Show the integration of content to various display screens.

4. Concept of view templates in design and development.

K. Course major projects. Part of the measurement for these projects is their portfolio suitability:
    1. Project 1: Basic slide show project. Students are given a topic, develop a content inventory, and work in teams to develop their individual project goals. This needs to start as early as possible in the course. The number of template slides should range from 5 to 10. Should demonstrate some of the template slides repeated with different content. The students need to include text, vector graphics, bitmap graphics, digital video, sound related to content and 2D animation.
    2. Project 2: Advanced multimedia essay project. Similar to Project 1 but of larger scope, this project requires students to develop a project that includes primary and secondary navigation on a topic of their choice. This project can start before delivery of the first and is delivered at the end of the course. Students present their Project 2s to the class for peer review.

VI. General Education and Course Learning Outcomes

A. General Education Learning Outcomes:

At the completion of the course, students will be able to:

1. Use multimedia authoring software and multimedia project management best practices to produce digital multimedia (G.E. 4)
2. Search for existing media online and apply the usage restrictions imposed by copyright or creative commons (G.E. IL, ER)

B. Course Learning Outcomes:

At the completion of the course, students will be able to:

1. Create and optimize bitmap graphics for appearance and file size using industry standard techniques
2. Create a vector based illustration
3. Create a concept sheet of different visual treatments for UI design elements
4. Create and optimize audio files for ambient sound, background music and UI feedback
5. Create and utilize animation in UI and content development
6. Optimize video files for appearance, file size and bandwidth profiles using industry standard techniques
7. Deconstruct existing digital multimedia applications to identify common UI/UX patterns in design
8. Utilize the terminology used by multimedia professionals.
9. Produce a project plan detailing the development of a multimedia project.

10. Design, manipulate and integrate digital multimedia exhibiting industry best practices in UX/UI for various forms of digital delivery.

C. Assessment Instruments

1. demonstrations
2. portfolios
3. computer programs

VII. Grade Determinants

A. Computer Projects – in and out of class
B. Midterm Exam – written and/or practical
C. Presentations
D. Final Exam – written and/or practical
E. Attendance

A. lecture/discussion
B. laboratory

VIII. Texts and Materials

A. Suggested textbook:
   - *Multimedia: Making it Work (9th ed)* by Tay Vaughan
     Publisher: McGraw-Hill Education
     ISBN-13: 978-0071832885

B. Other computer-based sources:
   - Appropriate Open Access multimedia resources (these resources change rapidly over time so the professor will have to assess what is currently available).

(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.)

IX. Resources

A. Computer access
B. Modern web browsers (Chrome, Safari, Mozilla, Edge, etc.)
C. Modern industry-standard multimedia authoring software (Adobe Creative Cloud, Audacity, etc.)

(Resources may change from semester to semester, due to the pace of the industry.)