

COURSE TITLE

Multimedia Design

LENGTH

Full Year
Grades 10-12

DEPARTMENT

Computer Department
Barbara O'Donnell, Supervisor

SCHOOL

Rutherford High School

DATE

Spring 2017

MULTIMEDIA DESIGN

I. Introduction/Overview/Philosophy

This course focuses on introducing students to the conceptual, technical, and visual design skills required to create interactive multimedia applications and environments. Students will learn the professional applications of software such as Adobe Flash, Adobe Photoshop, iMovie, and GarageBand, or equivalent digital imaging, animation, motion graphics and audio tool software. Course requirements include critiquing projects, story boarding ideas, retouching and modifying images, video and sound editing principles, motion graphics, text effects, as well as basic and advanced scripting. Course projects may include an animated personal bio, magazine cover, interactive games, and short movies.

The prerequisite for this course is the successful completion of Computer Programming 1.

II. Objectives

Course Outline:

- I. Adobe Flash (or similar computer animation/movie software)
 - a. Create and modify text
 - b. Use tempo controls and transitions
 - c. Create content for movie
 - d. Create simple animation/behaviors
 - e. Work with frames, keyframes, and layers
 - f. Create and edit symbols
 - g. Create buttons using Action Script or similar function
- II. Photoshop and digital images (or similar computer software)
 - a. Import and use images from cameras, clip art CD's, and scanner
 - b. Change image size and resolution
 - c. Crop images
 - d. Create and modify layers
 - e. Use painting tools
 - f. Apply transformations and filters
 - g. Convert images to various file formats.
- III. Use GarageBand (or similar program sound editing software)
 - a. Capture sounds from microphones, music CD's and sound effect CD's
 - b. Applying changes such as copying/pasting/mixing and effects
 - c. Import sounds into various course software
- IV. Use Game Maker (or similar software program) to create interactive games
 - a. Storyboard plan for class project
 - b. Apply changes such as copying/pasting/fading/mixing and effects
 - c. Import sounds into other various course software
- V. Use iMovie (or similar software program)
 - a. Create and edit movies and/or video files
 - b. Use images to make a "slide-show" type movie with transitions
 - c. Capture/import digital video
 - d. Export digital videos/movies
- VI. Final Project – a culminating project that incorporates text, sound, images, animation, and digital video in an interactive project and digital video in an interactive Flash (or similar software program) project
 - a. Designing and storyboarding of project

- b. Research and gather information
- c. Proper file management of project
- d. Peer evaluation to debug and to refine technical aspects
- e. Student submission and presentation of final project

Student Outcomes:

Upon completion of the course, students will demonstrate the ability to:

- Use servers to store and exchange files including text, sound, graphics, etc.
- Navigate through a Flash (or similar software program) movie.
- Understand the purpose and components of each Flash (or similar software program) window.
- Insert, delete, copy, and paste frames in a Flash (or similar software program) movie.
- Create and design a Flash (or similar software program) movie.
- Design images and vector shapes, and write text and editable fields.
- Script cast members and scores.
- Edit, convert, and import sound files.
- Convert and import animated gifs and create animated film loops.
- Capture and edit digital movie clips.
- Create a movie, convert to Quicktime and import into Flash (or similar software program).
- Use the digital camera, scanner, and Internet to import images into Flash (or similar software program).
- Use Adobe Photoshop editing features.
- Add transitions, text, sound, and special effects to the iMovie clips.
- Record sound using various software packages.
- Develop an interactive game using Game Maker or similar software package.
- Integrate all applications to make a multimedia project.

NJ Student Learning Standards

VISUAL AND PERFORMING ARTS

1.1 The Creative Process: All students will demonstrate an understanding of the elements and principles that govern the creation of works of art in dance, music, theatre, and visual art.

Strand D: Visual Art

TECHNOLOGY

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Strand B: Creativity and Innovation

Stand F: Critical thinking, problem solving, and decision making

8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:

All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Strand E: Computational Thinking: Programming

21ST CENTURY LIFE AND CAREERS

- 9.2 Career Awareness, Exploration, and Preparation
Strand A: Career Awareness
- 9.3 Career & Technical Education (CTE)
Pathway: Programming & Software Development (IT-PRG)
Pathway: Web & Digital Communications (IT-WD)

III. Proficiency Levels

This course is open to grades 10-12. Prerequisite is Computer Programming 1.

IV. Methods of Assessment

Student Assessment

The teacher will provide a variety of assessments during the course of the year. Among these are: homework, laboratory exercises, teacher-made tests and quizzes, and long-term projects.

Curriculum/Teacher Assessment

The teacher will provide the subject area supervisor with suggestions for changes on an ongoing basis.

V. Grouping

The prerequisite for Multimedia Design is successful completion of Computer Programming 1.

VI. Articulation/Scope & Sequence/Time Frame

Course length is a full year and is offered to students in grades 10-12.

VII. Resources

These are used as teacher resources only. There is no student text.

Habgood, Jacob and Mark Overmars. The Game Maker's Apprentice, New York: Apress, 2006

Adobe Creative Team. Adobe Flash Professional CS5 Classroom in a Box, Berkeley: Adobe Press, 2010.

Yo Yo Games Game Make Wiki http://wiki.yoyogames.com/index.php/Main_Page

VIII. Methodologies

The following methods of instruction are suggested: demonstration/lecture, individual and group projects, etc.

IX. Suggested Activities

Teacher-made tests and quizzes and notebook checks, student preplanning and story boarding preparation, long-term projects, daily written log entry reflections, active participation in class discussions and activities.

X. Interdisciplinary Connections

Connections are made to mathematics by using a variety of arithmetic formulas, as well as higher mathematical and computer programming concepts. Connections are also made to the disciplines of business, art and English, by means of incorporation of these ideas into programming projects.

XI. Differentiating Instruction for Students with Special Needs: Students with Disabilities, English Language Learners, and Gifted & Talented Students

Differentiating instruction is a flexible process that includes the planning and design of instruction, how that instruction is delivered, and how student progress is measured. Teachers recognize that students can learn in multiple ways as they celebrate students' prior knowledge. By providing appropriately challenging learning, teachers can maximize success for all students.

Examples of Strategies and Practices that Support:

Students with Disabilities

- Use of visual and multi-sensory formats
- Use of assisted technology
- Use of prompts
- Modification of content and student products
- Testing accommodations
- Authentic assessments

Gifted & Talented Students

- Adjusting the pace of lessons
- Curriculum compacting
- Inquiry-based instruction
- Independent study
- Higher-order thinking skills
- Interest-based content
- Student-driven
- Real-world problems and scenarios

English Language Learners

- Pre-teaching of vocabulary and concepts
- Visual learning, including graphic organizers
- Use of cognates to increase comprehension
- Teacher modeling
- Pairing students with beginning English language skills with students who have more advanced English language skills
- Scaffolding
 - word walls
 - sentence frames
 - think-pair-share
 - cooperative learning groups

XII. Professional Development

The teacher will continue to improve expertise through participation in a variety of professional development opportunities.

Curriculum Map

Class	September	October	November	December	January
Multimedia Design	<ul style="list-style-type: none"> • Course & grading Expectations • Egress Procedures • Introduction to Adobe Photoshop software • Students acquire images from Internet, CD server, scanner, and digital camera • Introduction to menus/toolbar of Photoshop • Learn/use selection tools (magic wand, lasso, magnetic lasso, add/sub selections, inverse, contract, feather, etc.) • Learn about the History Palette and how to undo actions • Learn about layers, hiding, showing, linking, merging, copying, pasting, etc. 	<ul style="list-style-type: none"> • Learn about Painting, Drawing, and Filling tools (changing colors, gradients, patterns, brushes, etc.) • Transforming of selections (skew, rotation, scale, perspective, etc.) • Students learn about image adjustments (brightness, contrast, etc.) and how to apply various filters. • Students learn to apply layer effects to text (shadows, glows, overlays, etc.) • Students apply Photoshop techniques and learn new techniques on their own through experimentation and online investigation 	<ul style="list-style-type: none"> • Introduction to Adobe Flash software • Create and modify text • Create content for movies • Create simple animations and behaviors • Students will learn to work with frames, keyframes, timelines, and layers • Create and edit symbols • Create buttons using Action Script 	<ul style="list-style-type: none"> • Students learn more advanced ActionScript • Perform simple calculations and operations on variables • Implement the use of counters • Use simple comparisons with the IF function • Use multi-stage comparison command IF-THEN-ELSE-END IF • Students create film loops using: onion skinning, target points and rotations; reverse sequence 	<ul style="list-style-type: none"> • Students will continue working with animations and using Action Scripts to make projects interactive • Students will work on online tutorials to enhance their knowledge of Adobe Flash

<i>Class</i>	February	March	April	May	June
Multimedia Design	<ul style="list-style-type: none"> • Students learn how to import songs into GarageBand, fade in, fade out, crop, adjust volumes, add tracks, loops, etc. • Exporting of GarageBand files to iTunes • Importing sounds/music into Director and using the tempo channels, cue points, and sound behaviors • Making sounds and/or music loop • Students apply Director/Garage Band techniques on a project 	<ul style="list-style-type: none"> • Students will be introduced to GameMaker (or similar software) to create an interactive game • Students will create and edit cast members • Students will create storyboard and plan out activity • Students will import cast and create movie in a timeline • Students will learn, apply, and implement various interactivity 	<ul style="list-style-type: none"> • Students will learn how to operate a digital camcorder • Students will learn how to retrieve data from camcorder to the computer • Students will understand the basics of iMovie: capturing video, selecting, playing, cropping, splitting, and importing clips • Students will add transitions, titles, audio/video effects, and sounds to videos • Exporting of movie to QuickTime to be used in Flash 	<ul style="list-style-type: none"> • Cumulative activity where students use skills, experiences, and techniques learned or honed from this course to develop a final project 	<ul style="list-style-type: none"> • Students will complete their final projects and share them with the rest of the class