

# Multimedia Arts and Technologies

Multimedia is a field of study and an industry emerging from the synthesis of communication networks and cross-disciplinary media development processes. The advent of digital technologies, media authoring, storage and distribution, in conjunction with traditional media production processes, has created this confluence of what is often referred to as a new media, digital media or multimedia.

The Multimedia Arts curriculum develops students' aesthetic and technical competence by providing training in state-of-the-art software, production processes, theory and concepts. The program prepares students for employment in applied media industries or for transfer to media programs at 4-year institutions. Our courses give students a core background in art, design and technical skills in media development, production and distribution.

Currently, the program offers two fields of study with a number of electives. These electives range in specialization from web design and development authoring, sound design and engineering, to 3-D animation and effects compositing. Students may seek an Associate in Arts Degree or pursue a more rigorous and concentrated Certificate.

Along with faculty and staff who bring a passion for teaching and support into the classroom, our program offers a state-of-the-art Digital Arts Center, including over 150 computers, scores of scanners, digital design, editing, animation and audio workstations, along with digital video/still cameras, lighting equipment and a video production studio.

## Program Student Learning Outcomes

### Multimedia Arts and Technologies Degree

1. Use multimedia elements (text, graphics, movie clips, etc.), combined with communication principles, basic graphic composition and visual display, to effectively communicate a chosen topic in electronic media theory.
2. Input, create, edit, enhance and composite a variety of visual media and then optimize and format for output to web, screen or mobile media.

3. Use industry-standard software to produce graphic design layouts; construct appropriate concepts to solve design problems; and apply process of design methodology.
4. Plan, design and construct a website in accordance with basic principles of effective web communication.
5. Identify and create basic values, color mixtures, color systems and basic design strategies to develop a 2-D composition, using elements according to traditional and contemporary design concepts.
6. Identify and incorporate the principles of composition, techniques of drawings and 2-D art.

### Multimedia Arts and Technologies Certificate

1. Use multimedia elements (text, graphics, movie clips, etc.), combined with communication principles, basic graphic composition and visual display, to effectively communicate a chosen topic in electronic media theory.
2. Input, create, edit, enhance and composite a variety of visual media and then optimize and format for output to web, screen or mobile media.
3. Use industry-standard software to produce graphic design layouts; construct appropriate concepts to solve design problems; and apply process of design methodology.
4. Plan, design and construct a website in accordance with basic principles of effective web communication.
5. Identify and create basic values, color mixtures, color systems and basic design strategies to develop a 2-D composition, using elements according to traditional and contemporary design concepts.
6. Identify and incorporate the principles of composition, techniques of drawings and 2-D art.
7. Analyze a film or films in relation to style, history, movement and genre, using film terminology and conventions of standard English in a final term paper.
8. Learn the fundamentals of 35mm traditional and digital cameras; digital printing; composition and image enhancement.

## Faculty and Offices

Alejandra Jarabo, *Chair* (A-170, ext. 4722)

Michael Gallegos (A-170, ext. 2914)

## Degrees, Certificates and Skills Competency Awards

Associate in Arts Degree, Media Arts  
 Certificate of Achievement, Media Arts  
 Associate in Arts Degree, Animation  
 Certificate of Achievement, Animation  
 Skills Competency Award,  
 Web Marketing and Media Design  
 Skills Competency Award,  
 Media Design and Development  
 Skills Competency Award, Mobile Media Core  
 Department Award, Game Design

### A.A. Degree: Animation

#### Department Requirements (33 units)

##### *Recommended Course Sequence*

#### Year 1 — Fall

ART 124A — Classical Animation I .....3

MAT 131 — Digital Imaging I .....3

MAT 136/DRFT 136 — Computer Animation I .....3

#### Year 1 — Spring

ART 141 — 3-D Design: Form and Space .....3

MAT 103 — Introduction to Multimedia .....3

MAT 137/DRFT 137 — Visual Effects for Film,  
 TV and Gaming *or* .....3

One course from Elective course list to follow.

#### Year 2 — Fall

MAT 138/DRFT 138 — 3-D Character Animation *or* .....3

One course from Elective course list to follow.

MAT 139/DRFT 139 — 3-D Lighting and Rendering *or* .....3

One course from Elective course list.

FP 181 — Principles of Audio Production *or* .....3

One course from Elective course list.

#### Year 2 — Spring

One course from Elective course list .....3

MAT 205 — Portfolio Development  
 and Professional Practices .....3

#### Elective Courses (Two courses required selected from the following):

FP 181 — Principles of Audio Production .....3

GDP 118 — Creative Thinking .....3

MAT 141 — 3-D Modeling .....3

MAT 145 — Video Game Design .....3

MAT 152 — Compositing for Animation .....3

### College Requirements

For complete information, see “Graduation Requirements” in the *Catalog Index*.

### Certificate of Achievement: Animation

#### Department Requirements (39 units)

##### *Recommended Course Sequence*

#### Year 1 — Fall

ART 124A — Classical Animation I .....3

MAT 131 — Digital Imaging I .....3

MAT 136/DRFT 136 — Computer Animation I .....3

#### Year 1 — Spring

ART 141 — 3-D Design: Form and Space .....3

MAT 103 — Introduction to Multimedia .....3

MAT 137/DRFT 137 — Visual Effects for Film, TV and  
 Gaming *or* .....3

One course from Elective course list to follow.

#### Year 2 — Fall

MAT 138/DRFT 138 — 3-D Character Animation *or* .....3

One course from Elective course list.

MAT 139/DRFT 139 — 3-D Lighting and Rendering *or* .....3

One course from Elective course list.

FP 181 — Principles of Audio Production *or* .....3

One course from Elective course list.

**Year 2 — Spring**

MAT 145 — Video Game Design *or*.....3  
 One course from Elective course list.  
 MAT 152 — Compositing for Animation *or* .....3  
 One course from Elective course list.  
 MAT 205 — Portfolio Development  
 and Professional Practices .....3

**Elective Courses (Four courses required selected from the following):**

FP 181 — Principles of Audio Production.....3  
 GDP 118 — Creative Thinking.....3  
 MAT 141 — 3-D Modeling .....3  
 MAT 145 — Video Game Design.....3  
 MAT 152 — Compositing for Animation.....3

**A.A. Degree: Media Arts**

**Department Requirements (18 units)**

GDP 110 - Media Design .....3  
 MAT 103 — Introduction to Multimedia .....3  
 MAT 116 — Flash I *or*  
 MAT 136/DRFT 136 - Computer Animation I .....3  
 MAT 131 — Digital Imaging I .....3  
 MAT 153 — Web Design I .....3  
 MAT 154 — Web Design II: Integration *or*  
 MAT 205 — Portfolio Development and  
 Professional Practices *or*  
 MAT 216 - Flash II .....3

*Recommended Course Sequence:* First semester: GDP 110, MAT 103 and 131; second semester: MAT 116 or 136/DRFT 136, 153, 154 or 205 or 216.

**College Requirements**

For complete information, see “Graduation Requirements” in the *Catalog* Index.

**Certificate of Achievement:  
Media Arts**

**Department Requirements (18 units)**

GDP 110 - Media Design.....3  
 MAT 103 — Introduction to Multimedia .....3  
 MAT 116 — Flash I *or*  
 MAT 136/DRFT 136 - Computer Animation I .....3  
 MAT 131 — Digital Imaging I .....3  
 MAT 153 — Web Design I .....3  
 MAT 154 — Web Design II: Integration *or*  
 MAT 205 — Portfolio Development and  
 Professional Practices *or*  
 MAT 216 - Flash II .....3

*Recommended Course Sequence:* First semester: GDP 110, MAT 103 and 131; second semester: MAT 116 or 136/DRFT 136, 153, 154 or 205 or 216.

**Skills Competency Award:  
Web Marketing and Media Design**

**Department Requirements (12 units)**

GDP 110 — Media Design .....3  
 MAT 131 — Digital Imaging I .....3  
 MAT 153 — Web Design I .....3  
 MKT 220/CIS 220 — Introduction to  
 Electronic Commerce .....3

*Students must complete the above courses with a grade of “C” or higher or credit in all courses.*

## Skills Competency Award: Media Design and Development

### Department Requirements (15 units)

CS 128 — Flash Programming.....	1.5
CS 190 — Video Game Programming .....	3
MAT 116 — Flash I.....	3
MAT 145 — Video Game Design.....	3
MAT 178 — Web Design for Mobile Devices.....	1.5
MAT/FP 179 — Media for Mobile .....	3

*Students must complete the above courses with a grade of “C” or higher or credit in all courses.*

## Skills Competency Award: Mobile Media Core

### Department Requirements (6 units)

MAT/MKT 164 — Online and Mobile Marketing .....	3
MAT 176 — Wireless and Media .....	1.5
MAT 177 — Case Studies in Mobile Media .....	1.5

*Students must complete the above courses with a grade of “C” or higher or credit in all courses.*

## Department Award: Game Design

### Department Requirements (15 units)

MAT 116 — Flash I.....	3
MAT 121 — Interface Design .....	3
MAT 131 — Digital Imaging I.....	3
MAT/DRFT 136 — Computer Animation I .....	3
MAT 145 — Video Game Design.....	3

*Students must complete the above courses with a grade of “C” or higher or credit in all courses.*

### Recommended Courses:

MAT 103 — Introduction to Multimedia .....	3
MAT 130 — Fundamentals of Digital Animation .....	3
MAT/DRFT 137 — Visual Effects for Film, TV and Gaming .....	3
MAT 290 — Work Experience in Multimedia .....	1-4

### Recommended Course Sequence

### Semester 1

MAT 131 — Digital Imaging I.....	3
MAT/DRFT 136 — Computer Animation I .....	3

### Semester 2

MAT 116 — Flash I.....	3
MAT 121 — Interface Design .....	3
MAT 145 — Video Game Design.....	3

## Course Descriptions

### MAT 103 — Introduction to Multimedia (3) F, S — CSU, UC

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Introduction to multimedia, including production processes, tools, techniques, trends and design principles, and production requirements of interactive multimedia development for the Web on different devices. Provides a comprehensive look at the concepts and principles of digital media, visual literacy and the influence on business, education, art, science and culture.

### MAT 105 — Survey of Multimedia Tools (3) F, S — CSU

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

*Course Advisories: MAT 103.*

Overview of tools and applications used to produce interactive multimedia, including software applications, peripherals and hardware. Major applications for design, photo processing, web design, authoring and video. Evaluation and description of the strengths of each program and potential for integration of production applications.

### MAT 109/ COMP 137B — Informational Graphics for the Web (0.5) S

Overview of how to create and publish web pages, using informational graphics, from existing office application files (MS Word, Excel, PowerPoint, Filemaker, etc.).

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**MAT 112 — Digital Drawing**

**(3) F, S, Summer — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Introduction to the powerful computer art tool of Illustrator. Use of Illustrator to create new works of art for various media: print, the web and CD-ROMs. How to use this tool's type, layout features, filters and other applications.

**MAT 113 — Dreamweaver**

**(3) F, S — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Students learn how to use a popular tool for web page design and construction called Dreamweaver. Includes how to inset images, create frames, make links, use forms, and manage websites by creating actual web pages.

**MAT 116 — Flash I**

**(3) F, S, Summer — CSU**

*Course Advisories: MAT 131 and MAT 154.*

Flash, a powerful animation tool for the web, is used to create stunning sites that stream through the bandwidth with vector-based graphics. It allows the creation of fully interactive, fully animated websites that are extremely compact.

**MAT 121 — Computer Interface Design**

**(3) — CSU**

*Prerequisites: MAT 131.*

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Advanced Photoshop techniques (filters, masks, postscripts and more) while simultaneously learning principles of human-computer interaction: use of colors, icon, typography and navigation influence on the designing of interfaces. How to design visually pleasing and highly functional screens for multiple uses, including stand-alone kiosks, the web, or CD-ROMs. Students should have solid skills in Photoshop.

**MAT 128 — Digital Video in Flash**

**(1.5)**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Flash, a powerful multimedia tool for the Web, can be used to incorporate compressed digital video into web pages without the need of a video player. Students create custom and dynamic interfaces for their Flash video content, and incorporate traditional flash content, such as animation, bitmap graphics and sound.

**MAT 130 — Fundamentals of Digital Animation**

**(3) F, S — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

*Course Advisories: Art 124A*

Introduction to digital animation, including production processes, tools, techniques, trends and opportunities. Examines the issues and limitations of various digital image and animation formats as to resolution, color and motion. Provides an overview of various industries utilizing digital animation, including terminology and methodology.

**MAT 131 — Digital Imaging I**

**(3) F, S, Summer — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Introduction to the image processing capabilities of PhotoShop to create and edit images and to prepare images for various media. No prior knowledge of PhotoShop is required. Includes tools selection, channels, layers, filters, text, brushes, effects, masks, adjustment layers.

**MAT 132 — Digital Imaging II**

**(3) F, S — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

*Course Advisories: MAT 112 and MAT 131*

Advanced Photoshop/Illustrator course which builds on skills learned in MAT 131 and MAT 112. Students work on projects which challenge their creativity and technical ability. Working with this image manipulation software, students develop complex commercial and surreal projects.

**MAT 136/DRFT 136 — Computer Animation I**

**(3) F, S, Summer — CSU**

*Skills Advisories: MATH 1 and eligibility for ENG 103.*

*Course Advisories: ART 124A and ART 140 and ART 141 and DRFT 131/ENGR 131.*

Fundamentals of computer animation, including modeling, animation and rendering. Focus on computer animation tools and techniques. Builds a solid foundation for developing character animation and special-effect sequences.

**MAT 137/DRFT 137 — Visual Effects for Film, Television and Gaming****(3) F, S — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Creating visual effects using 3-D and compositing software to complete the scene production. Utilizing particles, rigid-bodies and soft bodies, students apply techniques for creating natural phenomena, such as waterfalls and blowing leaves. Also explored are methods for simulating physical interactions, such as a chair falling down a staircase.

**MAT 138/DRFT 138 — 3-D Character Animation****(3) F, S — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Advanced 3-D computer animation course on character animation, including character design, modeling techniques for bodies, heads, hands and feet, skeletal and muscle systems, facial animation and lip-syncing to dialogue.

**MAT 139/DRFT 139 — 3-D Lighting and Rendering****(3) F, S — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Advanced 3-D computer animation course on the art and science of lighting and rendering. Techniques for creating photo-realistic computer-generated imagery explored, including lighting, shadowing, texture mapping and shader manipulation.

**MAT 141 — 3-D Modeling****(3) F, S — CSU**

Fundamentals of 3-D modeling, texturing, lighting and rendering. Focus on 3-D modeling tools and techniques. Builds a solid foundation for designing and modeling products, characters, sets and props for animation, product advertisements, movies and video games.

**MAT 145 — Video Game Design****(3) F, S — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103**Course Advisories: MAT 103.*

Introduces students to the field of computer gaming. A broad historical perspective of the computer gaming industry to understand and identify market trends that determine successful gaming software. Includes how to develop creative script writing, navigational schemes and interface designs for games. Students learn skills by reviewing stellar artifacts and designing and developing a game.

**MAT 149/COMP 149 — Social Networking and Social Media****(3) F, S — CSU***Skills Advisories: Eligibility for ENG 110 or ENG 110GB or ENG 110H*

Social networking and social media is the use, creation and distribution of various media formats and content as it relates to social networking in media-related fields and professions. Through a variety of social networking and media applications, content is developed, integrated and leveraged, using social networks/applications that employ public content. Students learn how the creation, consumption and distribution of media content establish networks and communities of shared interests for professional media designers and producers. Teaches the applied use of such online applications as Wikis, Youtube, Vimeo, Flickr, Myspace, Facebook, Digg, etc. and their roles across media-oriented platforms, from personal computers to smartphones.

**MAT 152 — Compositing and Visual Effects for Animation****(3) F, S, Summer — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Introduction to compositing and visual effects for computer animation. Working with Maya image sequences and alpha channel information. Color manipulation, filtering, keying (blue/green screen processing), camera tracking, rotoscoping and layering are used to create photo-realistic visual effects sequences.

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**MAT 153 — Web Design I**

**(3) F, S, Summer — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

*Course Advisories: ART 140.*

Covers the process of designing, developing and publishing websites. Students communicate with clients, negotiate a contract, set production schedules, design interfaces, develop content, and produce a website. Significant emphasis on designing attractive yet highly-functional sites. Course is project-driven. Students learn by redesigning a pre-existing website or creating a new one.

**MAT 154 — Web Design II: Integration**

**(3) F, S — CSU**

*Prerequisites: MAT 153.*

Students learn how to use popular Web design tools (Image Ready, Dreamweaver and Flash) for optimizing images and creating websites. Covers a range of tasks and functions of each software. Students learn the software by designing and creating a website.

**MAT 155 — Web Design III: Advanced**

**(3) S — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.*

*Course Advisories: MAT 153.*

Integration of multimedia elements in website design. Topics include graphics preparation, video, sound and animations on the web, communicating online, and designing for interactivity. Students should be familiar with creating a basic web page, formatting and downloading images, FTP, and understanding website structure. Students develop websites, using SoundEdit, Flash, Director's Shockwave, Image Ready and Premiere.

**MAT 164/MKT 164 — Online and Mobile Marketing**

**(3) — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103*

Introduction to those components needed to develop effective online and search engine marketing (SEM) strategies. Emerging digital media and mobile advertising campaign development are emphasized. Includes search engine optimization (SEO), paid placement ads, keyword identification, placement strategies, SEM research and management tools, and advertising applications in mobile marketing and video advertising.

**MAT 167 — 3D Environments Design**

**(3) S — CSU**

Modeling of man-made scenes, including photorealism applications, environmental lighting effects, advanced textures, project workflow and management, and optimizing environments for design visualization and games. Students complete a photorealistic model and a design visualization or game project for portfolio preparation.

**MAT 168 — Serious Game Prototyping**

**(3) S — CSU**

Prototyping games for virtual reality, simulations, education and marketing. Topics include the game industry, game play, game-based learning, game concept development, and game prototyping. Students explore game prototyping through hands-on projects, using rapid prototyping software. Includes student development of an original game prototype that can be distributed in a web browser.

**MAT 169 — Serious Game Production**

**(3) S — CSU**

Serious game design project planning and production through hands-on experience. Students work in teams to design and complete a game project, providing each student with portfolio preparation.

**MAT 176 — Wireless and Media****(1.5) F — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Introduction to the development, formats, specifications and distribution of media as it relates to applications and technologies in wireless networks. Covers the fundamentals of media development and distribution, via applications, telecoms, production companies, platforms, operating systems, technologies and the underlying infrastructures of wireless networks that make this possible.

**MAT 177 — Case Studies in Mobile Media****(1.5) F — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Introduction to case studies in mobile media development and distribution. Covers real world models of mobile media content, entertainment creation and their distribution methods, using existing companies and organizations as examples.

**MAT 178 — Web Design for Mobile Devices****(1.5) S — CSU***Course Advisories: MAT 153 and MAT 154*

Introduction to graphic content production for mobile devices. Emphasizes principles of interface design for a small screen and information design for interactivity on a limited area; graphic compression for cell phones; and how to minimize size of graphic-interface elements while keeping the desired appearance.

**MAT 179/FP 179 — Media for Mobile Devices****(3) F, S — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103**Course Advisories: FP 114 and FP 170 and FP 175.*

Introduction to media production for mobile devices, including the practicalities of producing content for mobile phones, portable gaming consoles and video i-pods. Includes specific format, content and technologies for mobile deployment; distribution of media for both video and audio podcasting; and broadcast protocols to PDAs, phones and other devices.

**MAT 183 — Radio Production I****(3) S — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.*

Introduction to fundamentals of radio production, including studio and field work. Covers producing, managing, scheduling and broadcasting/multicasting for a modern radio station. Through basic studio exercises and productions, including commercials, public service announcements, interview programs and general programming, students learn the tools of the medium, radio station formats and the creation of radio programming.

**MAT 205 — Portfolio Development and Professional Practices****(3) F, S — CSU***Prerequisites: GDP 212 or MAT 153 or PHOT 180.**Skills Advisories: Eligibility for ENG 100 and ENG 103.*

*Limitation on Enrollment: Students must have completed all requirements for a degree or certificate, except courses taken concurrently.*

In this final course, students learn how to prepare for media arts careers (web design, graphic design, audio, animation, photography and video). Communicating with employers through cover letters and interview, developing resumes and portfolios/reels, and using online resources for job hunting are covered. For the person who has taken several media arts courses and is nearing completion of the program.

**MAT 216 — Flash II****(3) S — CSU***Prerequisites: MAT 116.*

Students use Flash software for creating websites, interactive art pieces and animations. Covers a range of tasks and functions of the software: tool palettes, customization of settings, masking techniques, vector graphics, filters and plug-ins, outputting and inputting file formats, and action scripting.



**MAT 290 — Work Experience in Multimedia  
(1-4) F, S — CSU**

*Skills Advisories: Eligibility for ENG 100.*

*Course Advisories: MAT 103.*

*Consists of 75-300 hours of work (1-4 units) in employment, plus 2 hours of individual student/faculty conferencing.*

Supervised employment of students with the intent of creating student awareness of work opportunities, assisting them to acquire desirable work habits, and providing them with experiences in multimedia and related industries. Students perform assigned responsibilities as an employee, follow employer's policies, write individual learning objectives, keep a record of time worked, fill out a student data sheet, and secure an employee evaluation.