

# Multimedia Arts and Technologies

Multimedia is a field of study and an Industry emerging from the synthesis of the different mediums of communication. With the digitalization of all traditional media and the establishment of the web as the main vehicle of media transmission, multimedia has become “the content of the web”. The web experience mainly differs from previous mediums in its interactive and integrated way of articulating a time-based experience.

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 department’s programs prepare 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 web transmission.

Currently, the department offers two fields of study: web-based media in our media Arts Associate in Arts Degree and Certificate of Completion, animation and gaming through the Associate in Arts and Certificate of Completion with this name.

The animation and gaming program builds a foundation in 3D animation production and game development for entertainment, serious games and simulations. It consists of 27 mandatory units (3 semesters) and a number of recommended courses to further concentrate on skills in graphic art, modeling and 3D animation, 2D animation or interactive web programming. The Media Arts program, with only 18 units is designed to provide a foundation in web-based media and interactivity. Other classes in specialized mediums can be taken to create an individual media profile that will specialize the individual for better employment opportunities.

## Program Student Learning Outcomes

### Media Arts, Associate in Arts Degree and Certificate of Completion

1. Students will be able to input, create, edit, enhance and composite, a variety of visual media (vector based and bitmaps, 2D and 3D) then optimize and format for output to web, screen or mobile media.

2. Students will be able to develop sophisticated imagery that conveys a message..
3. Students will be able to plan, design and construct a website that effectively communicates business and user goals
4. Students will be able to plan, design and construct an interactive, user-oriented interface.

### Animation and gaming, Associate in Arts Degree and Certificate of Completion

1. Students will be able to create complex models, apply complex colors and textures to them according to a storyboard.
2. Students will be able to create a digital lighting system and render Photorealistic images in 2D.
3. Students WILL be able to create the necessary visual effects (environments and natural forces) specified for the story.
4. Students will be able to set up a skeleton for a 3D model and animate a character according to a storyboard.
5. Students will be able to animate a character according to the dialog in the story.

### Faculty and Offices

Michael Gallegos, *Chair* (A-170, ext. 2914)

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

### Degrees, Certificates and Skills Competency Awards

Associate in Arts Degree, Media Arts  
 Certificate of Achievement, Media Arts  
 Associate in Arts Degree, Animation and Gaming  
 Certificate of Achievement, Animation and Gaming  
 Skills Competency Award,  
 Web Marketing and Media Design  
 (in conjunction with Finance, International Business and Marketing Department)  
 Skills Competency Award,  
 Media Design and Development  
 Skills Competency Award, Mobile Media Core  
 Department Award, Game Design

**A.A. Degree: Animation and Gaming****Department Requirements (27 units)***Recommended Course Sequence***Semester 1 — Fall**

MAT 103 — Introduction to Multimedia .....	3
MAT 131 — Digital Imaging I.....	3
MAT 136/DRFT 136 — Computer Animation I.....	3

**Semester 2 — Spring**

MAT 137/DRFT 137 — Visual effects for Film, TV and Gaming .....	3
MAT 116 — Flash I, Interactive Fundamentals.....	3
MAT 145 — Video Game Design.....	3
MAT 205 — Portfolio Development & Prof Practices <b>or</b> MAT 216 — Flash II, Int. Story-Telling & Simple Games <b>or</b> MAT 168 — Serious Game Prototyping .....	3

**Semester 3 — Fall**

MAT 141 — 3D Modeling .....	3
MAT 138/DRFT 138 — 3D Character Animation <b>or</b> MAT 167 — 3D Environments Design.....	3

**College Requirements**

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

**Certificate of Achievement:  
Animation and Gaming****Department Requirements (27 units)***Recommended Course Sequence***Semester 1 — Fall**

MAT 103 — Introduction to Multimedia .....	3
MAT 131 — Digital Imaging I.....	3
MAT 136/DRFT 136 — Computer Animation I.....	3

**Semester 2 — Spring**

MAT 137/DRFT 137 — Visual effects for Film, TV and Gaming .....	3
MAT 116 — Flash I, Interactive Fundamentals.....	3
MAT 145 — Video Game Design.....	3
MAT 205 — Portfolio Development & Prof Practices <b>or</b> MAT 216 — Flash II, Int Story-Telling & Simple Games <b>or</b> MAT 168 — Serious Game Prototyping .....	3

**Semester 3— Fall**

MAT 141 — 3D Modeling .....	3
MAT 138/DRFT 138 — 3D Character Animation <b>or</b> MAT 167 — 3D Environments Design.....	3

Students must complete all department requirements for the certificate with a cumulative GPA of 2.0 or better.

**A.A. Degree: Media Arts****Department Requirements (18 units)**

GDP 110 — Media Design .....	3
MAT 103 — Introduction to Multimedia .....	3
MAT 116 — Flash I, Interactive Fundamentals <b>or</b> 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 <b>or</b> MAT 205 — Portfolio Development and Professional Practices <b>or</b> MAT 216 — Flash II, Interactive Story-Telling & Simple Games.....	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, Interactive Fundamentals <b>or</b> 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 <b>or</b> MAT 205 — Portfolio Development and Professional Practices <b>or</b> MAT 216 — Flash II, Interactive Story-Telling & Simple Games.....	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.

**Recommended courses:**

MAT 112 Digital Drawing, MAT 132 Digital Imaging II, FP 181 Principles of Audio Production.

We also recommend the 3 advanced classes: MAT 205 Portfolio Development, MAT 154 Web Design II, and MAT 216 Flash II, independently of you taking one of them as a mandatory requirement.

**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: Interactive Fundamentals.....	3
MAT 145 — Video Game Design.....	3
MAT 178 — Web Design for Mobile Devices.....	1.5
MAT/FP 179 — Media for Mobile Devices.....	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: Interactive Fundamentals.....	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) — CSU, UC**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.  
Hours: 90 (36 lecture, 54 lab)*

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.

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**MAT 105 — Survey of Multimedia Tools**

**(3) — CSU**

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

*Course Advisories: MAT 103.*

*Hours: 90 (36 lecture, 54 lab)*

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)**

*Hours: 9 lecture*

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

**MAT 112 — Digital Drawing**

**(3) — CSU**

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

*Hours: 90 (36 lecture, 54 lab)*

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) — CSU**

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

*Hours: 90 (36 lecture, 54 lab)*

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: Interactive Fundamentals**

**(3) — CSU**

*Hours: 90 (36 lecture, 54 lab)*

Flash is a powerful animation tool for the web. Students create interactive applications that result in a rich-media user experience. A foundation in Animation, Interactive principles, streaming media and ActionScripting 3.0 coding will be developed.

**MAT 121 — Computer Interface Design**

**(3) — CSU**

*Prerequisites: MAT 131.*

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

*Hours: 90 (36 lecture, 54 lab)*

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.*

*Hours: 45 (18 lecture, 27 lab)*

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) — CSU**

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

*Course Advisories: Art 124A*

*Hours: 54 lecture*

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) — CSU**

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

*Hours: 90 (36 lecture, 54 lab)*

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) — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.**Course Advisories: MAT 112 and MAT 131**Hours: 90 (36 lecture, 54 lab)*

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) — 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.**Hours: 90 (36 lecture, 54 lab)*

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) — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.**Hours: 90 (36 lecture, 54 lab)*

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) — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.**Hours: 90 (36 lecture, 54 lab)*

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) — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103.**Hours: 90 (36 lecture, 54 lab)*

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) — CSU***Hours: 90 (36 lecture, 54 lab)*

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) — CSU***Skills Advisories: Eligibility for ENG 100 and ENG 103**Course Advisories: MAT 103.**Hours: 90 (36 lecture, 54 lab)*

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) — CSU***Skills Advisories: Eligibility for ENG 110 or ENG 110GB or ENG 110H**Hours: 54 lecture*

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)— CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.  
Hours: 90 (36 lecture, 54 lab)*

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.

**MAT 153 — Web Design I**

**(3) — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.  
Course Advisories: ART 140.  
Hours: 90 (36 lecture, 54 lab)*

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) — CSU**

*Prerequisites: MAT 153.  
Hours: 90 (36 lecture, 54 lab)*

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) — CSU**

*Skills Advisories: Eligibility for ENG 100 and ENG 103.  
Course Advisories: MAT 153.  
Hours: 90 (36 lecture, 54 lab)*

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  
Hours: 54 lecture*

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) — CSU**

*Hours: 90 (36 lecture, 54 lab)*

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.

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**MAT 168 — Serious Game Prototyping  
(3) — CSU**

*Hours: 90 (36 lecture, 54 lab)*

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) — CSU**

*Hours: 90 (36 lecture, 54 lab)*

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) — CSU**

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

*Hours: 45 (18 lecture, 27 lab)*

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) — CSU**

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

*Hours: 45 (18 lecture, 27 lab)*

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) — CSU**

*Course Advisories: MAT 153 and MAT 154*

*Hours: 45 (18 lecture, 27 lab)*

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) — CSU**

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

*Course Advisories: FP 114 and FP 170 and FP 175.*

*Hours: 90 (36 lecture, 54 lab)*

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) — CSU**

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

*Hours: 90 (36 lecture, 54 lab)*

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) — 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.*

*Hours: 90 (36 lecture, 54 lab)*

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: Interactive Story-telling and Simple Games**

**(3) — CSU**

*Prerequisites: MAT 116.*

*Hours: 90 (36 lecture, 54 lab)*

Students use Flash software for creating web sites, interactive art pieces and simple games. Covers a range of tasks and functions of the software: Tween engines, movieclip construction to organize interactive content, creating and positioning movieclips with ActionScripting, Working with external media, simple XML, using Action Scripting 3.0.

**MAT 290 — Work Experience in Multimedia (1-4) — 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.*

*Hours: 60-300 lab*

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.