

# Multimedia Arts and Technologies

## Degrees, Certificates and 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

## Program Description

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 3-D 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 3-D animation, 2-D 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, 2-D and 3-D) 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 2-D.
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 3-D 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

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

Michael Gallegos (A-170, ext. 2914)

Alice Scharper, *Dean* (A-118, ext. 2354)

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

*Recommended Courses:*

ART 124A — Classical Animation I .....	3
ART 140 — 2-D Design: Composition and Color .....	3
ART 141 — 3-D Design: Form and Space .....	3
CS 111 — HTML & Webmastering .....	3
CS 120 — Java Programming.....	3
CS 122 — Java Mobile Device Programming .....	1.5
FP 177 — Motion Graphics I .....	3
FP 181 — Production Sound for Film and Television .....	3
MAT 112 — Digital Drawing.....	3
MAT 132 — Digital Imaging II.....	3
MAT 152 — Compositing & Visual Effects for Animation.....	3
MAT 153 — Web Design I .....	3
MAT 169 — Serious Game Production .....	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 — 3-D Modeling .....	3
MAT 138/DRFT 138 — 3-D Character Animation <b>or</b> MAT 167 — 3-D Environments Design.....	3

*Recommended Courses:*

ART 124A — Classical Animation I .....	3
ART 140 — 2-D Design: Composition and Color .....	3
ART 141 — 3-D Design: Form and Space .....	3
CS 111 — HTML & Webmastering .....	3
CS 120 — Java Programming.....	3
CS 122 — Java Mobile Device Programming .....	1.5
FP 177 — Motion Graphics I .....	3
FP 181 — Production Sound for Film and Television .....	3
MAT 112 — Digital Drawing.....	3
MAT 132 — Digital Imaging II.....	3
MAT 152 — Compositing & Visual Effects for Animation.....	3
MAT 153 — Web Design I .....	3
MAT 169 — Serious Game Production .....	3

*Students must complete all department requirements for the certificate with a cumulative GPA of 2.0 or better. Candidates for a Certificate of Achievement are required to complete at least 20% of the department requirements through SBCC.*

**AA Degree: Media Arts**

**Department Requirements (18 units)**

GDP 110 — Media Design *or*

    MAT 112 — Digital Drawing.....3

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

MAT 116 — Flash I: Interactive Fundamentals *or*

    MAT 121 — Computer Interface Design *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: 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 *or*

    MAT 112 — Digital Drawing.....3

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

MAT 116 — Flash I: Interactive Fundamentals *or*

    MAT 121 — Computer Interface Design *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: 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.

*Students must complete all department requirements for the certificate with a cumulative GPA of 2.0 or better. Candidates for a Certificate of Achievement are required to complete at least 20% of the department requirements through SBCC.*

**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 — Intro. 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: Interactive Fundamentals .....	3
MAT 121 — Interface Design .....	3
MAT 145 — Video Game Design .....	3

**Program Cost and Outcome**

For planning purposes, the following webpages provide information on the cost of attendance, program length (assuming a student attends full-time), financing options and historical student completion rates:

**Animation**

[www.sbcc.edu/financialaid/gainfulemployment/Animation.htm](http://www.sbcc.edu/financialaid/gainfulemployment/Animation.htm)

**Media Arts**

[www.sbcc.edu/financialaid/gainfulemployment/Media%20Arts.htm](http://www.sbcc.edu/financialaid/gainfulemployment/Media%20Arts.htm)

**Multimedia Arts and Technologies Courses**

**MAT 103 — Introduction to Multimedia**

**(3) — CSU, UC**

*Skills Advisories: Eligibility for ENG 100 and 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.

**MAT 105 — Survey of Multimedia Tools**

**(3) — CSU**

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

*Course Advisories: COMP 132B*

*Hours: 9 lecture*

Overview of how to create and publish webpages, 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 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 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)*

Students create interactive applications that result in a rich-media user experience on the web using Adobe Flash. A foundation in Animation, Interactive principles, interface design, streaming media and ActionScripting 3.0 coding will be developed.

**MAT 121 — Computer Interface Design**

**(3) — CSU**

*Skills Advisories: Eligibility for ENG 100 and 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 10.*  
*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 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 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 103*  
*Course Advisories: MAT 112 and 131*  
*Hours: 90 (36 lecture, 54 lab)*

Advanced Photoshop/Illustrator course which builds on skills learned in MAT 131 and 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**

*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 103*  
*Hours: 90 (36 lecture, 54 lab)*

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 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 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 103*

*Course Advisories: MAT 103*

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

Introduction to the design and development of games. Learn about the computer gaming industry, script-writing and storyboarding. Gain skills through the design and prototyping of a game.

**MAT 149/COMP 149 — Social Networking and Social Media**

**(3) — CSU**

*Skills Advisories: Eligibility for ENG 110 or 110GB or 110H*

*Hours: 54 lecture*

Use, creation and distribution of various media formats and content as they relate 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 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 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 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 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 — 3-D Environments Design**

**(3) — CSU**

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

Create assets for visualization and games. Includes modeling, environmental lighting, advanced textures, project workflow and management. Students complete a photo-realistic model for visualization or a game project versus portfolio preparation.

### **MAT 168 — Serious Game Prototyping**

**(3) — CSU**

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

Prototyping games for virtual reality, simulations, education and marketing. Topics include game play, game-based learning, game concept development and game prototyping. Students explore game prototyping through hands-on projects.

### **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 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 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 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 103*

*Course Advisories: FP 114 and 170 and 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 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**

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 websites, 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**

Supervised employment of students in multimedia and related industries consists of 75-300 hours of work (1-4 units) in employment, plus 2 hours of individual student/faculty conference.