# Multimedia

Cascade Campus
Moriarty Arts and Humanities Building (MAHB), Room 218
971-722-5398 or 971-722-5201
pcc.edu/programs/multimedia/

## Career and Program Description

This program is designed to provide individuals with the entry-level skills and experience needed for employment in a wide variety of professional opportunities such as a multimedia associate producer, interface designer, digital video specialist, motion graphic artist, digital compositor, 3D artist, multimedia graphic production artist, multimedia project manager, and more.

The program also provides ongoing skill development to members of the interdisciplinary multimedia team entering from related professions, such as graphic design, film/video, publishing, art, and more.

Multimedia specialists are employed by companies that produce digital media projects destined for screen delivery. Multimedia projects include those focused on business, marketing, education, training, presentations, and entertainment applications.

The program is located at the Cascade Campus. The 100 level multimedia courses are generally offered each term and students begin taking classes during any term. A variety of advanced, 200 level courses are also offered. Degree and certificate students must receive a C or better in all required multimedia courses and general studies courses.

## Degrees and Certificates Offered

### Associate of Applied Science Degree

- Multimedia
- Video Production

### One-Year Certificate

- Multimedia
- Video Production

#### Academic Prerequisites

- Students entering the program must possess strong Macintosh or Windows computer management skills and be familiar with essential software such as word processing and draw/paint programs. Recommended prerequisites: ART 115, ART 116, ART 117.

#### Academic Requirements

- All courses for the Multimedia AAS and Certificate and the Video Production AAS and Certificate must be completed for a grade of "C" or "P" or better.

#### Non-Academic Prerequisites

- None

#### Non-Academic Requirements

- None

### Associates of Applied Science Degree

Multimedia (p. 1)
Video Production (p. 2)

### Multimedia AAS Degree

Minimum 98 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

## Course of Study

The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>First Term</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 160*</td>
<td>Exploring Computer Science</td>
</tr>
<tr>
<td>or CS 140U</td>
<td>Introduction to UNIX</td>
</tr>
<tr>
<td>or CS 133G</td>
<td>Introduction to Computer Games</td>
</tr>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
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</table>

<table>
<thead>
<tr>
<th>Second Term</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 150</td>
<td>Multimedia Project Review, Testing and Delivery</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
</tr>
<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
</tr>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
</tr>
<tr>
<td>Multimedia Program Electives</td>
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<table>
<thead>
<tr>
<th>Third Term</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ART 103</td>
<td>Understanding New Media Arts</td>
</tr>
<tr>
<td>BA 131</td>
<td>Introduction to Business Technology</td>
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<tr>
<td>or BA 235</td>
<td>Social Media Marketing</td>
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<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
</tr>
<tr>
<td>MM 232</td>
<td>Multimedia 3D Modeling and Animation</td>
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<tr>
<th>Fourth Term</th>
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<tbody>
<tr>
<td>BA 205</td>
<td>Business Communication Using Technology</td>
</tr>
<tr>
<td>COMM 130</td>
<td>Business &amp; Professional Communication</td>
</tr>
<tr>
<td>or COMM 111</td>
<td>Public Speaking</td>
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<tr>
<td>or COMM 112</td>
<td>Persuasive Speaking</td>
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<tr>
<td>or COMM 214</td>
<td>Interpersonal Communication: Process and Theory</td>
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<tr>
<td>MM 270</td>
<td>Writing for Multimedia</td>
</tr>
<tr>
<td>or MM 259</td>
<td>Screenwriting/Preproduction</td>
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<tr>
<th>Fifth Term</th>
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<tbody>
<tr>
<td>ART 115</td>
<td>Basic Design - 2D Foundations</td>
</tr>
<tr>
<td>ART 131A</td>
<td>Drawing I</td>
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<td>Multimedia Program Electives</td>
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<table>
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<tr>
<th>Sixth Term</th>
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<tbody>
<tr>
<td>ART 116</td>
<td>Basic Design - Color Foundations</td>
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<td>WR 122</td>
<td>English Composition</td>
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<td>Multimedia Program Electives</td>
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<tr>
<td>General Education</td>
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### Seventh Term

- ART 117: Basic Design - 3D Foundations 3
- MTH 105: Math in Society 4
- General Education 4

### Eighth Term

- MM 250: Advanced Multimedia Project Development I 3

Total Credits: 98
MULTIMEDIA PROGRAM ELECTIVES

**VIDEO PRODUCTION AAS DEGREE**

Minimum 94 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Math/computation competency is met through the math course(s) required in the program of study. Students should consult with program advisors for course planning.

**Video Production Degree Courses**

- BA 205 Business Communication Using Technology 4
- BA 233 Principles of Marketing 3
- or BA 250 Small Business Management 1
- or BA 235 Social Media Marketing 2
- MM 160 Marketing Yourself as a Multimedia Professional 2
- MM 230 Graphics for Multimedia 4
- MM 235 Digital Video Editing and Production 4
- MM 236 Video Compression and Streaming on the Internet 3
- MM 237 Video Compositing and Effects 4
- MM 239 Digital Video Edit/Post Production II 4
- MM 246 Post-Production Sound for Video 2
- or MM 247 Field Sound for Video 3
- MM 250 Advanced Multimedia Project Development I 3
- MM 258 Video Compositing and Editing II 4
- MM 259 Screenwriting/Preproduction 4
- MM 260 Video Production I 4
- MM 261 Video Production II 4
- MM 262 Video Production III 4
- MM 280 Cooperative Work Experience in Multimedia 3
- MTH 105 * Math in Society 4
- MM 126 Sound for Picture 4
- MM 130 Multimedia Graphic Video and Audio Production 3
- MM 140 Multimedia Authoring I 3
- MM 141 Incorporating Multimedia Elements in Presentation Software 2
- MM 142 Introduction to Augmented Reality 1
- MM 146 Directing Actors for Recording 4
- MM 150 Multimedia Project Review, Testing and Delivery 1
- MM 160 Marketing Yourself as a Multimedia Professional 2
- MM 210 Audio Technician I - Intro 4
- MM 211 Audio Technician II - Multitrack/Post 4
- MM 212 Audio Technician III - Project Management 4
- MM 213 Audio Technician IV - Capstone Project 4
- MM 220 Multimedia Design II 3
- MM 221 Game Level Design 3
- MM 225 Game Art Pipeline 3
- MM 231 2D Animation I 3
- MM 232 Multimedia 3D Modeling and Animation 3
- MM 233 3D Character Modeling and Animation 3
- MM 234 3D for Interactivity 3
- MM 236 Video Compression and Streaming on the Internet 3
- MM 237 Video Compositing and Effects 4
- MM 238 Creating Professional DVD-Video 4
- MM 239 Digital Video Edit/Post Production II 4
- MM 240 Multimedia Authoring III - Scripting 4
- MM 241 Creating Interactive Web Pages 3
- MM 244 3D Character Modeling and Animation 3
- MM 245 3D Lighting and Texturing 4
- MM 246 Video Production III 4
- MM 247 Video Production II 4
- MM 248 Video Production I 4
- MM 253 Intermediate Modeling and Texturing 3
- MM 254 Character Rigging and Animation 3
- MM 255 3D Lighting and Texturing 3
- MM 256 Graphics for Multimedia II 4
- MM 258 Video Compositing and Editing II 4
- MM 259 Screenwriting/Preproduction 4
- MM 260 Video Production I 4
- MM 261 Video Production II 4
- MM 262 Video Production III 4
- MM 263 Cinematography/Lighting 4
- MM 264 Broadcast I 4
- MM 265 Broadcast II 4
- MM 266 Video Production I 4
- MM 267 Post-Production: Color Correction 4
- MM 268 Special Effects I - Green Screen 4
- MM 269 Producing and Directing Independent Film 4
- MM 270 Writing for Multimedia 3
- MM 275 Music Video Production 4
- MM 280 Cooperative Work Experience in Multimedia 1-3

**ART ELECTIVES**

- ART 103 Understanding New Media Arts 4
- ART 116 Basic Design - Color Foundations 3
- ART 140A Digital Photography I 3

**FILM STUDIES ELECTIVES**

- ENG 195 Film Studies: Film as Art 4
- ENG 196 Film Studies: Directors 4
- ENG 197 Film Studies: Contemporary Themes and Genres 4

**MULTIMEDIA PROGRAM ELECTIVES**

- MM 110 Introduction to Multimedia 1
- MM 120 Multimedia Design 2
- MM 121 Intro to Game Art Development 2
- MM 274 Marketing Yourself as a Multimedia Professional 2
- MM 276 Audio Technician I - Intro 4
- MM 277 Audio Technician II - Multitrack/Post 4
- MM 278 Audio Technician III - Project Management 4
- MM 279 Audio Technician IV - Capstone Project 4
- MM 280 Multimedia Design II 3
- MM 281 Game Level Design 3
- MM 285 Game Art Pipeline 3
- MM 286 2D Animation I 3
- MM 287 Multimedia 3D Modeling and Animation 3
- MM 288 3D Character Modeling and Animation 3
- MM 289 3D for Interactivity 3
- MM 290 Video Compression and Streaming on the Internet 3
- MM 291 Video Compositing and Effects 4
- MM 292 Creating Professional DVD-Video 4
- MM 293 Digital Video Edit/Post Production II 4
- MM 294 Multimedia Authoring III - Scripting 4
- MM 295 Creating Interactive Web Pages 3
- MM 296 3D Character Modeling and Animation 3
- MM 297 3D Lighting and Texturing 4
- MM 298 Video Production III 4
- MM 299 Video Production II 4
- MM 300 Video Production I 4
- MM 301 Intermediate Modeling and Texturing 3
- MM 302 Character Rigging and Animation 3
- MM 303 3D Lighting and Texturing 3
- MM 304 Graphics for Multimedia II 4
- MM 305 Video Compositing and Editing II 4
- MM 306 Screenwriting/Preproduction 4
- MM 307 Video Production I 4
- MM 308 Video Production II 4
- MM 309 Video Production III 4
- MM 310 Cinematography/Lighting 4
- MM 311 Broadcast I 4
- MM 312 Broadcast II 4
- MM 313 Video Production I 4
- MM 314 Post-Production: Color Correction 4
- MM 315 Special Effects I - Green Screen 4
- MM 316 Producing and Directing Independent Film 4
- MM 317 Writing for Multimedia 3
- MM 318 Music Video Production 4
- MM 319 Cooperative Work Experience in Multimedia 1-3

**ONE-YEAR CERTIFICATE**

- Multimedia (p. 3)
- Video Production (p. 4)
# Multimedia One-Year Certificate

Minimum 60 credits. Students must meet all certificate requirements.

## Course of Study

The coursework listed below is required. The following is an example of a term-by-term breakdown.

### First Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
<td>1</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</td>
</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
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<tr>
<td>MM Support Electives</td>
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### Second Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MM 150</td>
<td>Multimedia Project Review, Testing and Delivery</td>
<td>1</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>2</td>
</tr>
<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
<td>4</td>
</tr>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
<td>4</td>
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<tr>
<td>MM Program Electives</td>
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### Third Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MM 270</td>
<td>Writing for Multimedia or MM 259 Screenwriting/Preproduction</td>
<td>3</td>
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<tr>
<td>MM Program Electives</td>
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<tr>
<td>MM Support Electives</td>
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### Fourth Term

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MM 250</td>
<td>Advanced Multimedia Project Development I</td>
<td>3</td>
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<tr>
<td>MM Program Electives</td>
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<td>8</td>
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<tr>
<td>MM Support Electives</td>
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<td>6</td>
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</tbody>
</table>

Total Credits: 60

§ Course contains Related Instruction and cannot be substituted with another course; Related Instruction details can be viewed here.

## Multimedia Program Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
<td>1</td>
</tr>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
<td>2</td>
</tr>
<tr>
<td>MM 121</td>
<td>Intro to Game Art Development</td>
<td>2</td>
</tr>
<tr>
<td>MM 126</td>
<td>Sound for Picture</td>
<td>3</td>
</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
</tr>
<tr>
<td>MM 141</td>
<td>Incorporating Multimedia Elements in Presentation Software</td>
<td>2</td>
</tr>
<tr>
<td>MM 142</td>
<td>Introduction to Augmented Reality</td>
<td>1</td>
</tr>
<tr>
<td>MM 146</td>
<td>Directing Actors for Recording</td>
<td>4</td>
</tr>
<tr>
<td>MM 150</td>
<td>Multimedia Project Review, Testing and Delivery</td>
<td>1</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>4</td>
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<tr>
<td>MM 210</td>
<td>Audio Technician I - Intro</td>
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<td>MM 211</td>
<td>Audio Technician II - Multitrack/Post</td>
<td>4</td>
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<td>MM 212</td>
<td>Audio Technician III - Project Management</td>
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<td>MM 213</td>
<td>Audio Technician IV - Capstone Project</td>
<td>3</td>
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<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
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<td>MM 221</td>
<td>Game Level Design</td>
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<tr>
<td>MM 225</td>
<td>Game Art Pipeline</td>
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## Multimedia Support Electives

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ARCH 126</td>
<td>Introduction to AutoCAD</td>
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<tr>
<td>ARCH 127</td>
<td>Introduction to Google SketchUp</td>
<td>3</td>
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<tr>
<td>ARCH 136</td>
<td>Intermediate AutoCAD</td>
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<tr>
<td>ART 103</td>
<td>Understanding New Media Arts</td>
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<tr>
<td>ART 115</td>
<td>Basic Design - 2D Foundations</td>
<td>3</td>
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<tr>
<td>ART 116</td>
<td>Basic Design - Color Foundations</td>
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<td>ART 117</td>
<td>Basic Design - 3D Foundations</td>
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<tr>
<td>ART 119</td>
<td>Basic Design-4D Foundations</td>
<td>3</td>
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<tr>
<td>ART 131A</td>
<td>Drawing I</td>
<td>3</td>
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<tr>
<td>ART 131B</td>
<td>Drawing I</td>
<td>3</td>
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<td>ART 131C</td>
<td>Drawing I</td>
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<tr>
<td>ART 140A</td>
<td>Digital Photography I</td>
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<td>ART 140B</td>
<td>Digital Photography I</td>
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<td>ART 140C</td>
<td>Digital Photography I</td>
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<td>ART 214</td>
<td>History of Graphic Design</td>
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<td>ART 240A</td>
<td>Digital Photography II</td>
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<td>ART 240B</td>
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<td>ART 240C</td>
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<td>ART 279A</td>
<td>Experimental Media</td>
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<td>ART 279B</td>
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### Video Production Certificate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MM 120</td>
<td>Multimedia Design</td>
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<td>MM 130</td>
<td>Multimedia Graphic Video and Audio Production</td>
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</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as a Multimedia Professional</td>
<td>2</td>
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<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
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<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
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<tr>
<td>MM 237</td>
<td>Video Compositing and Effects</td>
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<td>MM 250</td>
<td>Advanced Multimedia Project Development</td>
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<td>MM 260</td>
<td>Video Production I</td>
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<tr>
<td>MM 261</td>
<td>Video Production II</td>
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<tr>
<td>MM 262</td>
<td>Video Production III</td>
<td>4</td>
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<tr>
<td>MM 280</td>
<td>Cooperative Work Experience in Multimedia</td>
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<tr>
<td>WR 247</td>
<td>Advanced Creative Writing - Scriptwriting</td>
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Total Credits: 47

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### Video Production Certificate Electives

- Video Production Certificate Electives
  - Video Production Certificate Electives
    - MM 110 Introduction to Multimedia: 1
    - MM 140 Multimedia Authoring I: 3
    - MM 141 Incorporating Multimedia Elements in Presentation Software: 2
    - MM 142 Introduction to Augmented Reality: 1
    - MM 146 Directing Actors for Recording: 4
    - MM 150 Multimedia Project Review, Testing and Delivery: 1
    - WR 210 Audio Technician I - Intro: 4
    - WR 211 Audio Technician II - Multitrack/Post: 4
    - WR 212 Audio Technician III - Project Management: 4

Total Credits: 47

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MM 110. Introduction to Multimedia. 1 Credit.
Explores the different roles, skills sets, jobs and equipment associated with the development of digital media. Examines the processes involved in producing content to meet a specific communication goal toward a target audience. Audit available.

MM 120. Multimedia Design. 2 Credits.
Introduces the multimedia development and design process. Includes identifying the functions and skills of a multimedia team, defining project goals and target audience, utilizing information architecture and user experience design principles, evaluating projects to determine deliverables and resource needs. Prerequisite: (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Prerequisite/concurrent: MM 110, or instructor permission. Audit available.

MM 121. Intro to Game Art Development. 2 Credits.
Introduces the game art design process. Includes identifying the functions and skills necessary to be successful in the game industry, fulfilling client needs, an overview of software used in the process, and basic introduction to gaming engines. Prerequisites: (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Prerequisite/concurrent: MM 110 or instructor permission. Audit available.

MM 126. Sound for Picture. 4 Credits.
Covers sound as exhibited in modern film and television productions of all genres. Includes sound design, foley walking, ADR recording, on-set recording, and soundtrack/score recording. Includes mixing, editing, and software skills training. This course is also offered as MUC 126; a student who enrolls in this course a second time under either designator will be subject to the course repeat policy. Recommended: MUC 223. Audit available.

MM 130. Multimedia Graphic Video and Audio Production. 3 Credits.
Introduces graphic, audio and video development for multimedia. Includes use of industry standard tools to produce digital media elements composed of graphics, audio and video to communicate an idea to a targeted audience. Prerequisites: (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Prerequisite/concurrent: MM 120, or instructor permission. Audit available.

MM 140. Multimedia Authoring I. 3 Credits.
Covers production of an interactive multimedia project incorporating graphics, text, video, and audio using multimedia industry standard authoring software. Incorporate the principles and practices from MM110, MM120, and MM130. Prerequisite/concurrent: MM 130 or instructor permission. Audit available.

MM 141. Incorporating Multimedia Elements in Presentation Software. 2 Credits.
Plan and produce a multimedia presentation using industry level presentation software (Microsoft PowerPoint(TM)). Incorporate design theory, clip-art, video clips and sound into a Microsoft PowerPoint(TM) presentation. Emphasis on quality, presentation flow and program design. Audit available.

MM 142. Introduction to Augmented Reality. 1 Credit.
Explores the process of directing for camera and voice recording work within the multimedia profession. Focuses on industry standards and principles. Examines the creation of simple projects that demonstrate the production and use of augmented reality. Prerequisites: (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 146. Directing Actors for Recording. 4 Credits.
Explores the process of directing for camera and voice recording work within the multimedia profession. Focuses on industry standards and principles. Examines the creation of simple projects that demonstrate the production and use of augmented reality. Prerequisites: (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 150. Multimedia Project Review, Testing and Delivery. 1 Credit.
Covers the final steps of a multimedia project including, quality assurance, beta testing, group evaluation and debugging techniques. Examines the different ways multimedia is currently being used. Covers tips and techniques for successfully promoting multimedia work. Prerequisite/concurrent: MM 140 or instructor permission. Audit available.

MM 160. Marketing Yourself as a Multimedia Professional. 2 Credits.
Explores the employment and independent market for multimedia professionals, including job qualifications for various positions in small to large organizations, as well as the general business environment for multimedia production. Provides an overview and opportunity to apply methods and practices used in finding and obtaining employment in the multimedia industry. Prerequisites: (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Prerequisite/concurrent: MM 130 or instructor permission. Audit available.

MM 210. Audio Technician I - Intro. 4 Credits.
Introduces the concepts and skills of audio mixing and recording for live events and video projects. Includes critical listening, the physics of sound and microphone design, the principles of signal flow, mixing, recording, and monitoring, and hands-on practices and assessments of contemporary mixing, sound reinforcement, and two-channel recording technique. Prerequisites: MM 246, MM 247, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 211. Audio Technician II – Multitrack/Post. 4 Credits.
Continues to develop skills in audio production for multi-track recordings of live events as well as field and sound stage-based projects. Applies industry-standard audio software and hardware for audio editing, mixing, and sweetening. Prerequisite: MM 210, and (WR 115 and RD 115) and MTH 20 or equivalent placement. Audit available.

MM 212. Audio Technician III – Project Management. 4 Credits.
Introduces project management skills including: concepts and applications of ADR, sound design, surround sound, mastering, and distribution. Includes scheduling, budgeting, working with video personnel, actors, composers, and other resources. Prerequisites: MM 211, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 213. Audio Technician IV - Capstone Project. 4 Credits.
Provides the opportunity to develop a personal capstone project that demonstrates mastery of Audio Technician Track concepts, applications, and skills, including project management, field audio, post production audio, sweetening, sound design, mastering, and distribution. Prerequisite: MM 212. Audit available.
MM 220. Multimedia Design II. 3 Credits.
Emphasizes design concepts including layout, typography, color theory, and information architecture with the goal of creating interactive designs that balance aesthetics and function. Includes participation in "real-world" client focused design projects. Prerequisites: MM 120, MM 130 or instructor permission. Audit available.

MM 221. Game Level Design. 3 Credits.
Analyses levels used in modern video games. Integrates both functional and aesthetic level design, level pacing and flow, player goals, and fun factor. Prerequisites: MM 121 or instructor permission, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 225. Game Art Pipeline. 3 Credits.
Introduces processes and methods necessary for developing game-specific content for contemporary game engines and real-time rendering environments. Focuses on team-based efficient production management and pipeline. Prerequisites: MM 232 or instructor permission, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 230. Graphics for Multimedia. 4 Credits.
Continues to develop skills using multimedia industry standard graphic software to create, edit and optimize graphic images for use in multimedia and interactive computer applications. Explores graphic creation, color, composition and compounding of multiple graphics for use in multimedia presentations and other multimedia formats. Prerequisite: (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Prerequisite/concurrent: MM 130 or instructor permission. Audit available.

MM 231. 2D Animation I. 3 Credits.
Introduces animation principles, techniques, and applications in linear storytelling, messaging, decoration and interactive motion graphics. Provides instruction and practice in using multimedia industry standard animation software to create short and long-form animations with synchronized sounds. Prerequisites: MM 130 or instructor permission. Audit available.

MM 232. Multimedia 3D Modeling and Animation. 3 Credits.
Provides an introduction to creating, editing, and taking apart 3D models. Develops foundational skills to work with, and navigate the digital 3D modeling workspace to create 3D objects. Examines basic elements of the 3D development of modeling, texturing, lighting, animating, and rendering. Prerequisite: MM 130, MM 140; or instructor permission, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 233. 3D Character Modeling and Animation. 3 Credits.
Introduces high-end digital sculpting and painting techniques used to create models, normal maps, and layered polygon textures. Develops skills using current industry tools and techniques utilized in professional game asset creation. Prerequisites: MM 232 or instructor permission. Audit available.

MM 234. 3D for Interactivity. 3 Credits.
Includes how to design, create, and display high-quality, interactive 3D graphics and animations using industry standard 3D modeling tools. Explores and tests delivery options, limitations, and quality issues. Prerequisites: MM 232. Audit available.

MM 235. Digital Video Editing and Production. 4 Credits.
Explores the post-production process for non-linear editing of digital video for use in video production and multimedia applications. Focuses on industry standard editing software to develop the foundation grammar of editing including continuity and montage principles. Prerequisite: MM 130 or instructor permission. Audit available.

MM 236. Video Compression and Streaming on the Internet. 3 Credits.
Introduces preparing video and audio for Internet playback, incorporating the principles of quality video and audio streaming techniques and technology. Introduces adaptation of video and audio segments for streaming using industry-standard digital editing and compression software. Covers cross-platform/cross-browser projects on both P2P-enabled and publicly available user-generated content (UGC) hosting services to be tested for performance on Macintosh and Windows computers using various browsers and players. Prerequisite: MM 235 or instructor permission. Audit available.

MM 237. Video Compositing and Effects. 4 Credits.
Introduces the creation of motion graphics using industry standard software. Illustrates the basic concepts of motion graphics, as well as the functions and capabilities of the software tools including their extensive compositing, keying, animation, and special effects capabilities. Prerequisites: MM 230, MM 235. Audit available.

MM 238. Creating Professional DVD-Video. 4 Credits.
Introduces creation of custom DVD-Video using professional level authoring software. Integrates video with audio, graphics, and other assets. Develops custom navigation, menus, chapters, and interactivity. Encodes uncompressed audio into highly compressed Dolby digital AC-3 streams, and incorporates it into the DVD authoring software. Prerequisite: MM 140 and MM 235, or instructor permission. Audit available.

MM 239. Digital Video Edit/Post Production II. 4 Credits.
Continues to develop and explore post-production design and delivery of digital video and audio for multimedia projects and television. Continues to build upon the basic techniques of video editing, color correction, audio development, media compression formats and codecs for video delivery using industry standard software. Analyzes, evaluates, and critiques existing video projects. Prerequisite: MM 235. Audit available.

MM 241. Multimedia Authoring III - Scripting. 4 Credits.
Continues to develop the essential and foundational authoring languages, concepts and practices. Includes advanced assembly of digital media elements will be assembled, made interactive through authoring, for web or mobile phone delivery and then tested for function, design, usability, and bugs. Prerequisite: MM 240; or instructor permission. Audit available.

MM 244. Creating Interactive Web Pages. 3 Credits.
Covers integrating multimedia content on websites using industry standard web development tools such as HTML5, CSS, and Content Management Systems. Explores the incorporation of multimedia elements on websites to optimize delivery of content on a variety of devices. Prerequisites: CAS 111D or CAS 206, and MM 140 or instructor permission. Audit available.

MM 246. Post-Production Sound for Video. 2 Credits.
Introduces the practice of sound editing for video projects. Examines multiple methods and workflows including: synchronizing of sound with picture, modification to maximize intelligibility, dialog replacement, the creation, collection and use of sound effects and music, mixing, and conforming sound to distribution standards. Prerequisites: MM 235 or instructor permission. Audit available.

MM 247. Field Sound for Video. 2 Credits.
Provides overview, exploration and practice of field sound recording for video projects. Examines multiple concepts, methods and techniques including; preproduction, microphone use, signal routing, mixing and improving sound recording in challenging acoustical environments. Prerequisites: MM 235 or instructor permission. Audit available.

MM 250. Advanced Multimedia Project Development I. 3 Credits.
Explores the connection between creative and technical skills required to develop digital multimedia projects. Covers planning, producing and implementation of interactive projects using industry standard software. Prerequisites: MM 230, MM 235 and (MM 270 or MM 259) or instructor permission. Audit available.

MM 251. Advanced Multimedia Project Development II. 3 Credits.
Continues to develop digital multimedia skills used in planning, producing and implementing interactive projects using industry standard software. Prerequisites: MM 250. Audit available.

MM 253. Intermediate Modeling and Texturing. 3 Credits.
Continues developing skills to produce 3D models through hands-on exercise and assignments. Explores relevant modeling toolsets, advanced modeling theory, and a variety of modeling approaches and theory. Includes intermediate rendering techniques. Prerequisites: MM 232, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 254. Character Rigging and Animation. 3 Credits.
Explores 3D character rigging and animation using industry standard 3D rigging and animation software. Covers the creation of a professional bipedal character rig, character animation and lip-syncing facial animation. Prerequisites: MM 235, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 255. 3D Lighting and Texturing. 3 Credits.
Expands upon lighting techniques with an in-depth focus on the technical aspects of both high-end lighting and shadows. Covers UV unwrapping and layout skills, and advanced graphic tool techniques in order to create professional quality textures. Prerequisites: MM 232 or instructor permission, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 256. Graphics for Multimedia II. 4 Credits.
Continues to develop skills using multimedia industry standard graphic software to create, edit and optimize graphic images for use in multimedia and interactive computer applications. Explores techniques to manage workflow of graphics production essential for use in multimedia presentations and other multimedia formats. Prerequisite: MM 230. Audit available.
MM 258. Video Compositing and Editing II. 4 Credits.
Continues development of essential foundation skills needed to create motion graphics using industry standard software. Illustrates intermediate concepts of motion graphics, and the functions and capabilities of the software tools including their extensive compositing, keying, animation, and special effects capabilities. Prerequisite: MM 237. Audit available.

MM 259. Screenwriting/Preproduction. 4 Credits.
Focuses on the pre-production phase of narrative video projects. Provides story structure, character development, and formatting for screenwriting. Covers the transition from script to screen including shot lists, location scouting and floor plans, and other pre-production variables. Prerequisite: WR 121. Audit available.

MM 260. Video Production I. 4 Credits.
Introduces digital video production, with a focus on the fundamentals of project planning, basic camera functions, shooting techniques, lighting principles, and audio recording fundamentals. Includes preproduction issues, production terminology, and evaluation of industry etiquette. Prerequisites: MM 130 and MM 255. Audit available.

MM 261. Video Production II. 4 Credits.
Continues video production at an intermediate level; includes digital camera, lighting, audio, and preproduction techniques. Focuses on narrative production techniques. Focuses on narrative production workflow, including an overview of industry crew positions, directing actors and scene coverage. Prerequisite: MM 235 and MM 260 and MM 259. Audit available.

MM 262. Video Production III. 4 Credits.
Explores documentary video making through hands-on exercises and assignments. Covers relevant preproduction methods and materials, the small-crew field production model, interviewing techniques, and further development of camera, lighting, audio, and editing skills. Prerequisites: MM 235, MM 260, MM 261, or instructor permission. Audit available.

MM 263. Cinematography/Lighting. 4 Credits.
Develops skills in lighting and camerawork for field and studio video production. Explores light fixtures, safety, theory, and techniques. Covers camerawork, composition, lens, techniques, and theory. Explores the roles of cinematographer and gaffer. Prerequisites: MM 235 and MM 260. Audit available.

MM 264. Broadcast I. 4 Credits.
Covers broadcast television workflow and techniques, including studio production, live events and multi-camera set-up productions. Explores the roles of directing, production switching and studio crew roles. Prerequisites: MM 235 or instructor permission. Audit available.

MM 265. Broadcast II. 4 Credits.
Produces productions for FCC-TV and Portland community. Extended development in broadcast television workflow and techniques. Prerequisite: MM 264. Audit available.

MM 266. Post-Production: Color Correction. 4 Credits.
Introduces the process of color correction, enhancements and effects of video materials using professional level color correction software. Includes color grading, color matching, lighting, and production workflow. Prerequisite: MM 239 or instructor permission, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 267. Special Effects I- Green Screen. 4 Credits.
Introduces the processes of green screen shooting, development of natural and virtual background environments, and compositing. Includes planning, setup and production of the shoot, and post-production processes. Prerequisite: MM 237 and MM 260 or instructor permission, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 268. Producing and Directing Independent Film. 4 Credits.
Explores preparation for careers working in independent film, television, documentary production, and episodics. Covers professional standards for directing and producing while examining DIY and indie techniques and concepts within production. Prerequisites: MM 260, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 270. Writing for Multimedia. 3 Credits.
Introduces creating and adapting technical information and linear narratives for non-linear, interactive multimedia applications. Includes developing ideas into multimedia scripts, incorporating text with other media, writing narration, and writing for voice-over, writing for interactivity, presenting text on-screen, and writing concisely. Prerequisites: MM 120, WR 121, 122, 123 or WR 214; or instructor permission. Audit available.

MM 275. Music Video Production. 4 Credits.
Introduces multi-cam live event recording and post work for music venues. Includes multi-cam recording, recording audio and working with microphones. Develops narrative production skills for creating a music video; including scripting, story-boarding, shooting, lighting, and post-production. Prerequisites: MM 261 or instructor approval, and (WR 115 and RD 115) or IRW 115 and MTH 20 or equivalent placement. Audit available.

MM 280. Cooperative Work Experience in Multimedia. 1-3 Credit.
Practice and enhance skills gained in the Multimedia 100 and 200 level classes. Spend 4 to 12 hours per week working in the multimedia industry (public/private sector organizations) working at an approved multimedia development company doing cooperative work. Develop career objectives by linking course work with out-of-classroom experiences by becoming part of the “multimedia team” learning cooperation, team building, communication skills and project development. Prerequisites: MM 230, 231, 235, 236, 240, 241, 245 or instructor permission. Audit available.