Career and Program Description
Web design and development represents a significant and growing industry segment that combines computer programming, extensive knowledge of software applications and proficiency in multimedia techniques. This program prepares students to plan, create, manage, supervise, and market web-based business operations, products, and services. These skills are transferable to a wide variety of web-related careers.

The Computer Applications/Office Systems (CAS/OS), Computer Information Systems (CIS), and Multimedia (MM) departments have partnered to create this Associate of Applied Science (AAS) two-year degree program. This interdisciplinary degree option combines back-end programming and development skills with front-end design skills to prepare students for a wide variety of web-related careers. Furthermore, students in this program will learn the designing, implementing, testing, and troubleshooting skills needed for web site construction and e-commerce applications, as well as incorporating multimedia techniques into web sites with audio and video applications.

In addition to foundational Web Design and Development skills, this program has two distinct focuses to choose from:

- Web Development – This emphasis will focus on web application development, networking, and server setup.
- Web Design – This emphasis will focus on multimedia, graphical as well as layout aspects of web site design.

Program Prerequisites and Requirements
Students must be competent with basic composition and math skills, word processing, spreadsheet, and basic formatting skills for common office documents. Basic browser navigation, searching the web, and electronic file management skills (creating, moving, copying, renaming, and deleting files and folders) are also essential to be successful in this program. Recommended (not required) courses to obtain these skills are CAS 104, CAS 133, CAS 170, CAS 216, OS 120, and BA 131.

MTH 65 or higher or passing the math competency exam is required for graduation.

Complete the following four parts to get 97 credits minimum:

1. All of the Development and Design Core Requirements (65-66 credits)
2. Choose an emphasis and complete one of the following:
   a. All the Development Emphasis Requirements (28 credits)
   or
   b. All the Design Emphasis Requirements (27 credits)
3. Any additional Development/Design Elective courses until total credits are 97 or above

All CAS/OS courses to be applied toward a CAS/OS certificate or degree must be passed with a “C” grade or better. (One credit classes must receive a pass grade.)

For additional information regarding CAS/OS programs:
- visit our websites at www.pcc.edu/cas and spot.pcc.edu/computers
- call us at (503) 977-4393.
Development and Design Core Requirements
(All courses required = 65-66 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CAS 111D</td>
<td>Beginning Dreamweaver</td>
<td>3</td>
</tr>
<tr>
<td>CAS 211D</td>
<td>Intermediate Dreamweaver</td>
<td>3</td>
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<tr>
<td>CAS 206</td>
<td>Principles of HTML/XHTML</td>
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<tr>
<td>CAS 208</td>
<td>Beginning Photoshop for the Web</td>
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<td>CAS 215</td>
<td>CSS and Dynamic HTML</td>
<td>4</td>
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<td>CAS 280W</td>
<td>Co-op Ed: Web Site Development</td>
<td>4</td>
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<tr>
<td>CIS 120</td>
<td>Computer Concepts I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 121</td>
<td>Computer Concepts II</td>
<td>4</td>
</tr>
<tr>
<td>CIS 178</td>
<td>Applied Internet Concepts</td>
<td>4</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>WR 121</td>
<td>English Composition</td>
<td>4</td>
</tr>
<tr>
<td>BA 205</td>
<td>Solving Comm. Problems w/Tech.</td>
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<tr>
<td>or MM 270</td>
<td>Writing for Multimedia</td>
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<tr>
<td>or WR 227</td>
<td>Technical and Professional Writing I</td>
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<tr>
<td>BA 207</td>
<td>Introduction to E-Commerce</td>
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<tr>
<td>or CIS 243</td>
<td>E-Commerce Information Systems</td>
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<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
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<tr>
<td>or BA 239</td>
<td>Advertising</td>
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</tr>
<tr>
<td>MM 110</td>
<td>Introduction to Multimedia</td>
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<td>MM 120</td>
<td>Multimedia Design</td>
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<tr>
<td>MSD 279</td>
<td>Project Management</td>
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<td></td>
<td>General Education (Arts &amp; Letters)</td>
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<tr>
<td></td>
<td>General Education (Social Sciences)</td>
<td>4</td>
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Development Emphasis Requirements
(All courses required = 28 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS 213</td>
<td>Enhancing Web Pages with JavaScript</td>
<td>4</td>
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<tr>
<td>or CIS 233</td>
<td>Internet Web Page Scripting</td>
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<tr>
<td>CAS 214</td>
<td>Beginning ColdFusion</td>
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<tr>
<td>or CIS 234</td>
<td>Web Application Development Using .NET</td>
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<tr>
<td>or CIS 195P</td>
<td>PHP Web Development I</td>
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<tr>
<td>CIS 133B</td>
<td>Intro to Visual Basic .NET Programming</td>
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<tr>
<td>or CIS 133J</td>
<td>Java Programming I</td>
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<td>CIS 122</td>
<td>Software Design</td>
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<td>CIS 125D</td>
<td>Database Application Development I</td>
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<tr>
<td>CIS 179</td>
<td>Data Communication Concepts I</td>
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<tr>
<td>CIS 287I</td>
<td>Web Server Administration</td>
<td>4</td>
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Design Emphasis Requirements
(All courses required = 27 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CAS 175</td>
<td>Introduction to Flash</td>
<td>3</td>
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<tr>
<td>ART 115</td>
<td>Basic Design</td>
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<tr>
<td>ART 116</td>
<td>Basic Design</td>
<td>3</td>
</tr>
<tr>
<td>MM 130</td>
<td>Multimedia Graphic Video/Audio Production</td>
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<tr>
<td>MM 140</td>
<td>Multimedia Authoring I</td>
<td>3</td>
</tr>
<tr>
<td>MM 160</td>
<td>Marketing Yourself as Multimedia Pro</td>
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<tr>
<td>MM 220</td>
<td>Multimedia Design II</td>
<td>3</td>
</tr>
<tr>
<td>MM 230</td>
<td>Graphics for Multimedia</td>
<td>4</td>
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<tr>
<td>MM 231</td>
<td>Vector Graphics &amp; Animation for the Web</td>
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</table>

Development/Design Electives
(Choose from these courses until total credits are 97 or above)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CIS 233B</td>
<td>Intermediate Visual Basic .NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>or CIS 233J</td>
<td>Java Programming II</td>
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<tr>
<td>CIS 234B</td>
<td>Advanced Visual Basic .NET Programming</td>
<td>4</td>
</tr>
<tr>
<td>or CIS 234J</td>
<td>Java Programming III</td>
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<tr>
<td>CIS 275</td>
<td>Data Modeling and SQL Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CIS 276</td>
<td>Advanced SQL</td>
<td>4</td>
</tr>
<tr>
<td>ART 140</td>
<td>Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART 197</td>
<td>Artist’s Skills/Practical Issues</td>
<td>3</td>
</tr>
<tr>
<td>MM 235</td>
<td>Digital Video Editing and Production</td>
<td>3</td>
</tr>
<tr>
<td>MM 236</td>
<td>Internet Delivery of Digital Video/Audio Files</td>
<td>3</td>
</tr>
<tr>
<td>MM 245</td>
<td>Internet Delivery Methods</td>
<td>3</td>
</tr>
<tr>
<td>MM 236</td>
<td>Internet Delivery of Digital Video/Audio Files</td>
<td>3</td>
</tr>
</tbody>
</table>

Any course in either emphasis area above may be used as an elective as long as it is not being used as a requirement.

1 Satisfactory progress through two terms of web site related courses or equivalent experience is required before enrolling in CAS 280W.
2 CIS 120 and CIS 121 may be used toward the General Education Math/Physical Science/Computer Studies requirements.
3 Students who choose the Design Emphasis cannot use ART 115 and ART 116 toward the General Education Arts & Letters requirements.