Career Description: A Computer Information Systems E-Commerce certificate is intended to meet technical career needs in business and industry for positions such as Web Server Administrator, Webmaster, E-Commerce Manager, HTML Programmer, Help Desk/User Support, Web Technologist, Web Developer, Web Designer/Programmer, and Web Producer. Specialists in these positions will be able to administer and manage web servers and design and program transaction-based web sites that interface to databases. They will be able to communicate effectively and use key programming, publishing, database and transaction tools. With both a business and technical perspective, they will be able to identify e-commerce issues such as telecommunications, security, and scalability.

Program Prerequisites: Students must have a strong CIS background before beginning this certificate. This may be accomplished by the CIS AAS degree or by equivalent industry experience.

Course of Study: Programs are located at Cascade, Rock Creek, Southeast Center, and Sylvania campuses. The program is targeted to students and working professionals who wish to specialize in web server and database programming and administration as they relate to E-Business and E-Commerce.

These courses are not listed in the order in which they should be completed. The student is expected to work with a faculty advisor in planning term-by-term schedules leading toward fulfillment of all program requirements.

Core courses are required and comprise 26 credit hours of the total of 46 credit hours. Additionally, 20 credit hours of electives are required from one of the two areas of concentration, either the Design and Development, or Administration.

<table>
<thead>
<tr>
<th>Required Core Courses</th>
<th>Credits</th>
<th>Total Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number</td>
<td>Course Name</td>
<td></td>
</tr>
<tr>
<td>WR 227</td>
<td>Technical Writing 1</td>
<td>3</td>
</tr>
<tr>
<td>CIS 225</td>
<td>End User Support</td>
<td>4</td>
</tr>
<tr>
<td>CIS 275</td>
<td>Database Development</td>
<td>4</td>
</tr>
<tr>
<td>CIS 244</td>
<td>Systems Analysis</td>
<td>4</td>
</tr>
<tr>
<td>CIS 243</td>
<td>E-ssentials of E-commerce</td>
<td>4</td>
</tr>
<tr>
<td>CIS 280D</td>
<td>CE: Application Development (Co-op)</td>
<td>1</td>
</tr>
</tbody>
</table>

Business Elective -
Choose 1 of the following:
- BA 206 Management Fundamentals 3
- BA 203 Intro to International Business 3
- BA 226 Business Law 1 3
- BA 223 Principles of Marketing 3

General Education Elective-
Choose from either Arts & Humanities, or Social Science 3

Total Core Course Credits 26

2003-2004 Catalog, Revised May 2003
### Areas of Concentration - Design and Development, or Administration
Select 20 credits from one track. Note that at least 12 of the 20 credits must CIS courses.

#### Design and Development Track
**CIS Web Development electives**
- CIS 233S: Web Page Scripting, 4 credits
- CIS 234S: Web Application, 4 credits

**CIS Programming electives - Java or VB.NET (non .NET courses not accepted)**
- CIS 233J: Intermediate Java Programming, 4 credits
- CIS 233B: Intermediate VB.NET, 4 credits
- CIS 234J: Advanced Java Programming, 4 credits
- CIS 234B: Advanced VB.NET, 4 credits
- (or CIS 234V: Advanced VB.NET for Programmers)

**CIS Database electives**
- CIS 276: Database Development II, 4 credits
- CIS 277O: Advanced Database Concepts - Oracle, 4 credits
- CIS 277T: Oracle Forms/Reports Developer, 4 credits
- CIS 280D: CE: Application Development (Co-op), 1-2 credits

Other electives (Note: Maximum of 8 credits will apply)
- CAS 112 / 206: Intermediate Web Site Development, 3 credits
- CAS 113: Enhancing Web Pages w/JavaScript, 3 credits
- CAS 175: Introduction to Flash, 3 credits
- CAS 110: Intro to Web Graphics, 1 credit
- MM 130: Multimedia Graphic Video & Audio, 3 credits
- MM 230: Graphics for Multimedia, 4 credits

**Total Design and Development track electives** 20 credits

#### Administration Track - Select 20 credits
- CIS 287I: Web Server Administration, 4 credits
- CIS 179: Data Communications I, 4 credits
- CIS 240 L and/or M: Operating Systems II, 4-8 credits
- CIS 279 L and/or M: Network Administration I, 4-8 credits
- CIS 288 L and/or M: Network Administration II, 4-8 credits
- CIS 289 M: Network Administration, 4 credits
- CIS 280D: CE: Application Development (Co-op), 1-2 credits

**Total Administration track electives** 20 credits

**Total E-commerce Certificate** 46 credits

---

2003-2004 Catalog, Revised May 2003