CITY COLLEGE
montana state university billings

COMPUTER PROGRAMMING & APPLICATION DEVELOPMENT
(webpage/database developer)

What is computer programming & application development?

It is an exciting program that will take the student deep into the world of application development. The emphasis in the program is leveraging and customizing existing computer technologies to meet business needs.

What you will learn

- <u>Programming Languages</u>: C++, C#, HTML5, Python, Java, JavaScript, Objective-C, PHP, SQL, and Swift

- <u>Database Skills</u>: Structured Query Language, Database Design, and Database Administration

- <u>Web Development</u>: XHTML, Cascading Style Sheets, Flash, Dreamweaver, and Photo Editing skills

- <u>Operating Systems</u>: Windows 10 and Windows Server

- <u>Applications</u>: Microsoft Excel and Access Software Engineering: Courses covering Software Development Methodologies, System Analysis, Documentation, and Quality Assurance Access

- Develop small and medium-sized applications for nearly any business need

- Manipulation and custom programming resulting in the extension of the capabilities of application software and database software packages such as Access and Oracle

Certifications preparing for
Sun Certified Java Programmer, Microsoft Certification Application Developer

Type of college degree
Associate of Applied Science degree (two-year)

Career information
Graduates from this degree will enjoy the option of continuing on to a four year degree if they choose, or they can enter into the business world as valuable candidates to any of the following potential jobs:

> Visual Basic Programmer, Java Programmer Application Developer, Web Developer Database Programmer, Access & Excel Programmer

Job Outlook and Pay

Median Wage (MT)*	$45,850 yearly
	$22.05 per hour
Median Wage (US)*	$67,900 yearly
	$32.69 per hour

*Bureau of Labor Statistics, Office of Employment Projections; MT Dept. of Labor and Industry, Research and Analysis Bureau (projections through MT 2024 U.S. 2026)
**For more information visit http://www.careerinfonet.org/Occupations.

City College entry-level wages of graduates: **$34,105** (2014-2017)

Computer Programming & Application Development
(Associate of Applied Science Degree)

Required Courses	Credits
CAPP 156 MS Excel	3
CAPP 158 MS Access	3
COMX 106 Communicating in a Dynamic Workplace	3
CSCI 100 Introduction to Programming	3
CSCI 111B Programming with Java I	3
CSCI 114 Programming with C#	3
CSCI 116 Introduction to Python Programming	3
CSCI 121 Programming with Java II	4
CSCI 124 Advanced C#/.NET	3
CSCI 181 Web Design and Programming	3
CSCI 211 Client Side Programming	3
CSCI 214 Server-Side Web Programming & Administration	3
CSCI 223 Software Development	3
CSCI 240 Databases and SQL	3
CSCI 258 Web Application Development	3
CSCI 299 Thesis/Capstone	4
ITS 166 MS Windows 10 Configuration	3
ITS 212 Network Operating – Server Admin	3
ITS 224 Introduction to Linux	3
M 143 Finite Mathematics	4
NTS 104 CCNA 1: Intro to Networks	4
WRIT 121 Introduction to Technical Writing	3
Total minimum credits	**69**

First Semester	Credits
CAPP 156	3
CSCI 100	3
CSCI 181	3
CSCI 240	3
ITS 166	3
WRIT 121	3
Total	*18*

Second Semester	Credits
COMX 106	3
CSCI 116	3
CSCI 211	3
CSCI 214	3
ITS 212	3
ITS 224	3
Total	*18*

Third Semester	Credits
CAPP 158	3
CSCI 111B	3
CSCI 114	4
CSCI 223	3
M 143	4
Total	*16*

Fourth Semester	Credits
CSCI 121	3
CSCI 124	3
CSCI 258	3
CSCI 299	4
NTS 104	4
Total	*17*