

# INFORMATION TECHNOLOGY, COMPUTER PROGRAMMING, ASSOCIATE IN APPLIED SCIENCE (DPRP)

Effective: Fall 2016

The Computer Programming specialization is intended to prepare students for a career or further study in computer programming. A computer programmer works with a computer analyst and computer engineer to analyze, design, develop, test, implement and maintain computer applications to meet the functional objectives of a business. It is the job of the computer programmer to design and update the software that runs on the computer. A programmer generally works with an analyst to help determine the best way to approach a problem or implement a desired feature for a new version of a software package. A programmer codes the changes and then tests and debugs the software. The Computer Programming specialization emphasizes the more popular computer programming languages used in business today.

The Associate in Applied Sciences in the Information Technology (IT) Career Degrees at Delaware County Community College blends the theoretical with the practical. Students are offered a choice of specializations: Computer Programming, Game Development, Help Desk/Technical Support, Interactive Multimedia, Network Engineering, Mobile Computing and Web Development. Students have the benefit of classroom or online instruction, dedicated laboratory facilities and participation in co-curricular activities. Students in the IT Career Degrees are required to take program courses and related electives in their specialization as well as four IT core courses. In addition, students are required to take general education courses.

## Program Outcomes

- Analyze problems with respect to the requirements of the computer and the required results.
- Plan detailed program logic to solve problems and convert the logic to a well-structured applications program using an industry standard language and providing program documentation.
- Demonstrate the ability to use debugging techniques.
- Use mathematical equations in the creation of a computer program.
- Use documentation or a knowledge base to resolve a technical challenge in an identified computing scenario.

## Full-Time Academic Plan

First Semester		Hours
CS 100	Introduction to Information Technology	3
NET 110	Network Communications	3
CS 101	Introduction to Computer Science	3
ENG 100	English Composition I	3
Select one of the following:		3-4
MAT 135	Business Precalculus	
MAT 151	College Algebra	
MAT 160	Calculus I	
<b>Hours</b>		<b>15-16</b>
Second Semester		
CS 110	Introduction to C++	3

IMM 120	Web Page Design and Development	3
CS 104	Introduction to Java Programming	3
ENG 112	English Composition II: Writing About Literature	3
Mathematics Elective		3-4
<b>Hours</b>		<b>15-16</b>
Third Semester		
CS 210	Object Oriented C++	3
CS 204	Intermediate Java Programming	3
Any transferable Oral Communication (OC) designated course		3
Any transferable Diversity and Social Justice (DJ) and Global Understanding (GU) designated Social Science course		3
CS/IMM/NET Course - select only one		3
<b>Hours</b>		<b>15</b>
Fourth Semester		
CS 212	Data Structures and Algorithms	4
Any transferable Scientific Inquiry (SI) designated Science Elective with a Lab course		3-4
Humanities Elective		3
CS/IMM/NET course - select two		6
<b>Hours</b>		<b>16-17</b>
<b>Total Hours</b>		<b>61-64</b>

## Notes

**Oral Communication designated courses** ([https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#OC\\_Course\\_List](https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#OC_Course_List)).

**Diversity and Social Justice and Global Understanding designated courses** ([https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#Dual\\_DJ\\_GU\\_CourseList](https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#Dual_DJ_GU_CourseList)).

**Scientific Inquiry designated courses** ([https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#SR\\_Course\\_List](https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#SR_Course_List)).

### Mathematics Elective:

Code	Title	Hours
Select from one of the following sequences:		
MAT 135 & MAT 136	Business Precalculus and Business Calculus	6
MAT 151 & MAT 152	College Algebra and Precalculus	8
MAT 160 & MAT 161	Calculus I and Calculus II	8

### Program Electives CS/IMM/NET:

Students are required to complete a total of three (3) Program Electives from CS/IMM/NET. Recommended CS/IMM/NET courses to choose from the following options:

Code	Title	Hours
CS 214	jQuery/JavaScript	3
CS 222	Visual Basic Programming	4
CS 240	Responsive Web Design	3
IMM 110	Multimedia Graphics & Design	3
IMM 201	Audio and Video for Multimedia	3
NET 115	Microsoft Windows	4
NET 116	Microsoft Hybrid Server: Core Infrastructure	4

NET 230	Linux Operating Systems I	4
NET 231	Microsoft Hybrid Server II	4

The Computer Science faculty suggest seeing an advisor when selecting elective courses to ensure alignment with career goals.

## Part-Time Academic Plan

Course	Title	Hours
<b>First Semester</b>		
CS 100	Introduction to Information Technology	3
NET 110	Network Communications	3
CS 101	Introduction to Computer Science	3
<b>Hours</b>		<b>9</b>
<b>Second Semester</b>		
ENG 100	English Composition I	3
Select one of the following:		3-4
MAT 135	Business Precalculus	
MAT 151	College Algebra	
MAT 160	Calculus I	
CS 110	Introduction to C++	3
<b>Hours</b>		<b>9-10</b>
<b>Third Semester</b>		
IMM 120	Web Page Design and Development	3
CS 104	Introduction to Java Programming	3
ENG 112	English Composition II: Writing About Literature	3
<b>Hours</b>		<b>9</b>
<b>Fourth Semester</b>		
Mathematics Elective		3-4
CS 210	Object Oriented C++	3
CS 204	Intermediate Java Programming	3
<b>Hours</b>		<b>9-10</b>
<b>Fifth Semester</b>		
Any transferable Oral Communication (OC) designated course		3
Any transferable Diversity and Social Justice (DJ) and Global Understanding (GU) designated Social Science course		3
CS/IMM/NET Course - select only one		3
<b>Hours</b>		<b>9</b>
<b>Sixth Semester</b>		
CS 212	Data Structures and Algorithms	4
Any transferable Scientific Inquiry (SI) designated Science Elective with a Lab course		3-4
Humanities Elective		3
<b>Hours</b>		<b>10-11</b>
<b>Seventh Semester</b>		
CS/IMM/NET course - select two		6
<b>Hours</b>		<b>6</b>
<b>Total Hours</b>		<b>61-64</b>

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NET 230	Linux Operating Systems I	4
NET 231	Microsoft Hybrid Server II	4

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## Career