



## **Computer Programmer/Analyst A.B.**

Career Community: Computer Technology and Networking

Curriculum Code: 0113

Effective: Fall 2023 – Summer 2028

### **Description**

Programmer/analysts plan, develop, test, and document computer programs at the request of a specific user, applying knowledge of programming, project management, testing, and quality assurance techniques and computer systems. They may evaluate user requests to determine feasibility, cost, and time required, as well as compatibility with current system and computer capabilities. In addition, they read manuals, periodicals, and technical reports to develop programs that meet user requirements and to remain current with developments and standards in the information technology industry. They formulate a plan outlining steps required to develop programs and convert project specifications into program source instructions which are entered into the computer system and tested. They may write documentation and the user manual. Students completing this curriculum may also be eligible for the Computer Programmer/Analyst Certificate of Completion (0969), Computer Software Tester Certificate of Achievement (1633), and Mobile Application Developer Certificate of Achievement (1712). Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor before enrolling in any course.

### **Milestone**

In addition to the required General Education courses in Math and English, completion of CITP 110 with a 2.0 or higher is a key component for success in completing this program. Knowledge obtained in these courses is the foundation for learning in other required courses. Students are encouraged to contact their faculty if they need additional assistance with learning the concepts presented in these courses.

### **Contact Information**

For further information, including career options, course substitutions and waivers, etc., contact the Computer Information Technologies Program in the West Campus Building, Room M103, telephone number 517-267-6406 or Student Services West Campus, West Campus Building, Room M016, telephone number 517-267-5452.

### **General Education - Applied Degrees, Recommended Courses**

(For the full list of options, see [General Education](#))

- English Composition or Applied English – *Select one*  
ENGL 121, Composition I, 4 credits / 4 billing hours
- English Composition (second course)/Communication or Applied Communication – *Select one*  
COMM 110, Communication in the Workplace, 3 credits / 3 billing hours  
COMM 120, Dynamics of Communication, 3 credits / 3 billing hours  
COMM 130, Fundamentals Public Speaking, 3 credits / 3 billing hours

- Humanities and Fine Arts or Social Sciences or Applied Social Sciences– *Select one*  
 GEOG 200, World Regional Geography, 4 credits / 4 billing hours  
 MGMT 234, Diversity in the Workplace, 3 credits / 3 billing hours  
 SOCL 120, Introduction to Sociology, 4 credits / 4 billing hours
- Mathematics or Applied Mathematics – *Select one*  
 MATH 119, Math - Applications for Living, 4 credits / 4 billing hours  
 STAT 170, Introduction to Statistics, 4 credits / 4 billing hours
- Natural Sciences Lab or Applied Science and Technology Lab – *Select one*  
 BIOL 120, Environmental Science, 4 credits / 6 billing hours  
 CHEM 135, Chemistry in Society, 4 credits / 5 billing hours  
 PHYS 120, The Art of Physics, 4 credits / 5 billing hours

### Program of Study Required Courses

Course Code	Course Title	Credit / Billing Hours
BUSN 118	Introduction to Business	3 / 3
CITD 120	SQL Concepts	3 / 3
CITF 110	Intro Computer Info Systems	3 / 3
CITF 260	Systems Analysis and Design	4 / 4
CITP 110	Intro to Programming-Python	4 / 4
CITP 130	Intro to Mobile App Devel	3 / 3
CITP 140	Software Testing	3 / 3
CITP 190	Intro to Programming in JAVA	4 / 4
CITW 150	Internet Literacy	3 / 3
CITW 160	Web Development HTML & CSS	3 / 3

### Program of Study Required Courses, Limited Choice - Introductory Programming

- *Select one*

Course Code	Course Title	Credit / Billing Hours
CITP 150	Intro to VB.NET Programming	4 / 4
CITP 180	Intro to C#.NET Programming	4 / 4

### Program of Study Required Courses, Limited Choice - Computer - *Select two courses, minimum 6 credits*

Course Code	Course Title	Credit / Billing Hours
CITD 250	Database Concepts	3 / 3
CITF 140	Information Technology Ethics	3 / 3
CITN 120	Networking Concepts	3 / 3
CITP 295	Programming Internship	3 / 3
CITW 165	Web Development JavaScript	3 / 3
CITW 180	Web Development ASP.NET	4 / 4
CITW 185	Web Development PHP & MySQL	4 / 4

**Program of Study Required Courses, Limited Choice - Advanced Programming -**  
*Select one*

Course Code	Course Title	Credit / Billing Hours
CITP 230	Mobile App Devel for Android	4 / 4
CITP 235	Mobile App Devel for Apple	4 / 4
CITP 250	Advanced VB.NET Programming	4 / 4
CITP 280	Advanced C#.NET Programming	4 / 4
CITP 290	Adv JAVA Programming for Busn	4 / 4

**Minimum Total Credit Hours**

65 credits / 66 billing hours

**Recommended Course Sequence**

Semester I
Gen Ed – Mathematics or Applied Mathematics
CITF 110
CITP 110 – Milestone course
CITP 130
CITW 150

Semester II
Gen Ed – English Composition or Applied English
BUSN 118
CITD 120
CITW 160
Limited Choice - Introductory Programming

Semester III
Gen Ed – English Composition (second course)/ Communication or Applied Communication
CITP 140
CITP 190
Limited Choice - Computer

Semester IV
Gen Ed – Humanities and Fine Arts or Social Sciences or Applied Social Sciences
Gen Ed – Natural Sciences Lab or Applied Science and Technology Lab
CITF 260
Limited Choice - Advanced Programming
Limited Choice - Computer

*LCC makes every effort to limit revisions to the pathways during their effective timeframe. However, the College reserves the right to update certificate and degree title changes, and make course changes as needed, without prior notice.*