

PROGRAMMING BASICS, CAREER PATHWAY CERTIFICATE OF COMPLETION

The Career Pathway Certificate of Completion: Programming Basics offers the fundamental core courses in Computer Science. The core courses give the student a well-rounded basic understanding of computer application development. Students completing this certification will be prepared to seek entry-level employment in occupations such as network administration support, entry software developer, and software testing.

[Click here to learn how this Career Pathway Certificate can lead to an AAS in CIS Software Development.](#)

GRADUATION REQUIREMENTS

Students must complete a minimum of 16 credit hours with a cumulative Grade Point Average (GPA) of 2.0 or better. All courses must be completed with a grade of 'C' or better. One course must be completed at Southwestern before the Career Pathway Certificate of Completion is awarded.

Complete the graduation application process one term prior to the term of completion (e.g., spring term graduates must apply during winter term).

PROGRAM STUDENT LEARNING OUTCOMES

Upon successful completion of this program, the student will be able to:

- Plan, write and debug software applications within multiple programming environments.
- Apply project life cycle concepts to assist in finding solutions to business needs.
- Research, interpret, and communicate technical information in written, graphic, diagrammatic, electronic and oral forms.
- Demonstrate the ability to work independently or in a group environment with sensitivity to needs of customers and coworkers.

PRE-PROGRAM COURSES

Students are required to take the following courses *prior to* the program courses, depending on students' college placement information. See advisor for details:

Code	Title	Credits
CIS90	Computer Basics (or demonstrate proficiency)	2
MTH60	Algebra I (or placement in higher math course)	4
WR90R	Academic Literacy (or placement in higher writing course)	4

PROGRAM GUIDE

Course	Title	Credits
First Year		
Fall		
CS160	Computer Science Orientation	4

MTH86	Computer Technology Mathematics ¹	4
		Credits
		8
Winter		
CS161	Introduction to Computer Science I	4
		Credits
		4
Spring		
CS162	Introduction to Computer Science II	4
		Credits
		4
		Total Credits
		16

¹ MTH105 or higher excluding MTH211 may be substituted for MTH86.