COMPUTER PROGRAMMING CERTIFICATE OF SPECIALIZATION

These certificates offer specific training for either entry-level positions or to augment related programs such as Network Administration, Web Development, Business Office Technology or Graphic Design. The certificates are designed to demonstrate a relatively narrow expertise or skill area that may be used to attain a computer industry "niche" job.

Students who complete the requirements below qualify for a certificate in that area of emphasis. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.

Program Learning Outcomes

Upon successful completion of this certificate, students will be able to:

- Be proficient in at least one high-level programming language and an ability to use that language to implement software solutions in a variety of settings following the systems development life cycle (SDLC).

Certificate Requirements

Code	Title	Units
CS-119	Program Design and Development	3
CS-119L	Program Design and Development Lab	1
CS-181	Introduction to C++ Programming	4
or CS-182	Introduction to Java Programming	
CS-281	Intermediate C++ Programming and Fundamental Data Structures	4
or CS-282	Intermediate Java Programming and Fundamental Data Structures	
Total Units		**12**