

# Computer Programming (Certificate) (For Post- Baccalaureate Students, Distance Education)

To see what you will learn while pursuing this program, visit the Learning Outcomes website (<https://apps.oirp.ncsu.edu/pgas/>)!

The Computer Science Department offers the Computer Programming Certificate (CPC) to post-baccalaureate students (PBS) to enable them to change careers, enhance their professional credentials, or simply learn more about computer programming. The focus of the required courses is the theory and practice of the basics of Computer Science and computer programming. Rather than teach applications and a single skill set, the program focuses on higher-order analytical skills that are crucial to mastery of an ever-changing field. This certificate is offered via Distance Education through Engineering Online.

## Admissions Requirements

Although anyone with the prerequisites can take CSC classes offered through the CPC Program, the CPC is a distance-only program for PBS students. After students have been accepted as an NDS student at NC State, they may apply for the CPC program. Students must submit a BS/BA transcript from a degree other than computer science or computer engineering. The certificate is awarded to students completing the required courses with a grade point average of 2.0 or above.

Engineering Online and the Department of Computer Science jointly maintain and distribute a written description for interested prospective students. The Director of Advising for the Department of Computer Science coordinates with Registration & Records in the issuing of certificates.

Students may enroll for classes through Engineering Online (<https://www.engineeringonline.ncsu.edu/apply-and-enroll/enroll/>).

## Program Coordinators

Certificate Director  
Dr. Sarah Heckman  
North Carolina State University  
Department of Computer Science-Engineering  
Campus Box 8206  
Raleigh, NC 27695  
919-515-2042  
[sarah\\_heckman@ncsu.edu](mailto:sarah_heckman@ncsu.edu)

Director of Engineering Online  
Dr. Linda Krute  
North Carolina State University  
College of Engineering – Dean's Office  
Campus Box 7547  
Raleigh, NC 27695  
919-515-5440  
[linda\\_krute@ncsu.edu](mailto:linda_krute@ncsu.edu) ([linda\\_krute@ncsu.edu](mailto:linda_krute@ncsu.edu))

## Academic Structure

Term Effective: 1/1979; 8/2011, 1/2019

Plan Code: 14CPCTU, 32CPCTU

CIP Code: 14.0901

Description: Undergraduate Certificate in Computer Programming

Offered: Distance Education (<https://online-distance.ncsu.edu/program/undergraduate-certificate-in-computer-programming/>) format only

## Plan Requirements

Code	Title	Hours
<b>Required Courses</b>		
MA 121	Elements of Calculus <sup>1</sup>	3
CSC 116	Introduction to Computing - Java <sup>2</sup>	3
CSC 216	Software Development Fundamentals <sup>2</sup>	3
CSC 217	Software Development Fundamentals Lab <sup>2</sup>	1
CSC 226	Discrete Mathematics for Computer Scientists	3
CSC 230	C and Software Tools	3
CSC 236	Computer Organization and Assembly Language for Computer Scientists	3
CSC 246	Concepts and Facilities of Operating Systems for Computer Scientists	3
CSC 316	Data Structures and Algorithms	3
Total Hours		25

<sup>1</sup> Please note that students who intend to pursue graduate study after completion of the CPC need MA 141 Calculus I, not MA 121 Elements of Calculus.

<sup>2</sup> with a grade of C or better

The Department of Computer Science waives the pre/co-requisite of MA 121 Elements of Calculus or MA 131 Calculus for Life and Management Sciences A or MA 141 Calculus I so students interested in the CPC may begin by taking CSC 116 Introduction to Computing - Java. However, a Calculus I class remains a requirement for the CPC program. E 115 Introduction to Computing Environments is waived as a prerequisite for CSC 116 Introduction to Computing - Java since this is a DE program and E 115 Introduction to Computing Environments material is not needed for student success.