

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

Program Overview

Computer science is an ever-evolving field and the role of computer programmers in our society has been redefined many times over. Future computing professionals hoping to keep pace with the world's rapidly-changing technologies must first develop a solid foundation in the basic principles of computer programming. The Department of Computer Science and Engineering Online provides that foundation through our Computer Programming Certificate (CPC) program. Students are awarded the certificate after completing the required courses with a grade point average of 2.0 or above.

The CPC curriculum is aligned with the Computer Programming Minor, the Bachelor of Science in Computer Science curriculum, and the preparatory undergraduate coursework that is required for success in Computer Science graduate programs. All courses in the CPC have the same learning outcomes as the courses offered to degree-seeking students.

Admission Requirements

Offered entirely online, and open to students with a bachelor's degree in any field other than computer science or computer engineering, the Computer Programming Certificate (CPC) is ideal for working professionals. The CPC is specifically designed to help you gain the fundamental computing skills you need to further your current career or prepare for a career change. The CPC is a professional credential that verifies your programming competency and understanding of the theoretical foundations of computer science. The required courses focus on developing Java programming skills that you can use to successfully program in any environment.

CPC Application Information (<https://www.engineeringonline.ncsu.edu/programs-and-courses/certificates/computer-programming-certificate/admissions/>)

Certificate Requirements

Completing the CPC requires 22 – 23 hours of coursework in mathematics, programming languages, and other core principles of computer science beyond the calculus requirement (Calculus I may be worth 3 or 4 credit hours depending on the course taken - students may take MA 121, MA 131, MA 141, or transfer equivalent). The Department of Computer Science coordinates with Registration & Records in issuing certificates.

Program Contact and Advisor

Coordinator of Advising, Department of Computer Science

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Program Coordinators

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Academic Structure

Term Effective: 1/1979; 8/2011, 1/2019, 7/2021

Plan Code: 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

The certificate is awarded to students completing the required courses with a certificate GPA of 2.0 or higher.

Code	Title	Hours
Required Courses		
MA 121	Elements of Calculus ¹	3-4
	(or any college calculus course)	
CSC 116	Introduction to Computing - Java ²	3
CSC 216	Software Development Fundamentals ²	3
CSC 217	Software Development Fundamentals Lab ²	1
CSC 226	Discrete Mathematics ²	3
CSC 230	C and Software Tools	3
CSC 246	Concepts and Facilities of Operating Systems for Computer Scientists	3
CSC 316	Data Structures and Algorithms	3
Total Hours		22-23

¹ 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.

² with a grade of C or better

The Department of Computer Science waives the 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.