Computer Programming Education Undergraduate Certificate

The undergraduate certificate in Computer Programming Education is an 18 credit hour program. It is designed to provide secondary school science teachers with training needed to implement a range of computer programming related courses in their schools. A minimum GPA of 2.5 is required for admission.

A minimum of four courses must be taken in residence in the Department of Mathematics and Computer Science at UMSL. Courses may be substituted with the permission of the program director.

Core Courses		
CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2261	Object-Oriented Programming	3
ED TECH 3420	Computer Programming and Pedagogy	1
Electives		**6**
Choose two of the following:		
CMP SCI 2700	Computer Organization and Architecture	
CMP SCI 2750	Linux Environment and Programming	
CMP SCI 3010	Web Full Stack Development	
CMP SCI 3702	Introduction to Cyber Threats and Defense	
CMP SCI 4010	Web Development with Java	
CMP SCI 4011	Web Development with Advanced JavaScript	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4220	Introduction to iOS Programming and Apps	
CMP SCI 4222	iOS Apps	
CMP SCI 4610	Database Management Systems	
INFSYS 3844	Developing Business Applications in .NET	
Total Hours		**18**