

# Mobile Apps and Computing Undergraduate Certificate

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The undergraduate certificate in Mobile Apps and Computing is a five-course (15 credit hour) program. It is designed to provide training in technologies and framework for mobile apps and computing. A minimum GPA of 2.5 is required for admission.

## Required Courses

CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	3
CMP SCI 4220	Introduction to iOS Programming and Apps	3
CMP SCI 4792	Introduction to Mobile Computing, Networking, and Security	3

## Electives

Choose two of the following courses:		6
CMP SCI 4010	Web Development with Java	
CMP SCI 4222	iOS Apps	
CMP SCI 4610	Database Management Systems	
CMP SCI 4750	Introduction to Cloud Computing	
CMP SCI 4794	Introduction to Security of IoT Systems	

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<b>Total Hours</b>	<b>15</b>
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A minimum of three courses must be taken from UMSL. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email [info@arch.umsi.edu](mailto:info@arch.umsi.edu).

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Identify and implement techniques for communicating complex information in the Internet, particularly for mobile and wireless platforms
- Use appropriate programming languages and tools to integrate media and user interaction
- Design and develop applications in mobile and wireless computing, using representative mobile devices and platforms
- Assess and implement security principles in mobile applications
- Evaluate the quality and performance of mobile applications