



**Computer Science Technology - Apple App Development  
Short-term Certificate  
M.A.P.**

Semester	Suggested Courses	Semester(s) Offered*	Credit Hours
<b>Semester 1</b> 10 credit hours	CIS 149 Introduction to Computers	Fall	3
	CIS 191 Introduction to Computer Programming Concepts	Fall	3
	CIS 193A Introduction to Computer Programming Lab	Fall	1
	CIS 157 Introduction to App Development with Swift	Fall	3
<b>Semester 2</b> 9 credit hours	CIS 251 C++ Programming (Recommended CST Elective)	Spring	3
	CIS 193B C++ Programming Lab (Recommended CST Elective)	Spring	1
	CIS 220 App Development with Swift I (Recommended CST Elective)	Spring	3
<b>Semester 3</b> 6 credit hours <b>Apple App Development STC Achieved</b>	CIS 159 Introduction to Graphic Design for Apps (Recommended CST Elective)	Fall	3
	CIS 227 App Development with Swift II (Recommended CST Elective)	Fall	3
<b>Total Hours</b>			<b>25</b>

\*Course(s) may be offered in additional semesters but are only assured to run in the semester(s) indicated. It is **highly** recommended that course(s) be completed in the semester(s) indicated.

Part-time students and full-time students desiring to begin the CST program of study during a spring or summer semester should consult with an academic advisor to establish an alternate degree completion pathway.