

32 Credit Hour Certificate - Programming

Name: _____ ID#: _____ Date: _____

Computer programmers are the unsung heroes in the IT field. Every system must run at its optimum performance to deliver information vital to doing business. Programmers provide the means to retrieve that data. MACC trains programmers in several languages to meet the world's IT needs. Visual Basic, Java and C++ are the core languages. Individuals also learn SQL, a database query language used in database management and more. Concepts are delivered to provide maximum transfer of knowledge to other languages. Programming graduates are prepared to enter the field as entry-level programmers or transfer to a four-year institution.

Taken	Course	Required Courses	Hours	Milestone*
	ITC106	IT Essentials	3	
	ITC120	^Programming I	3	ITC120
	ITC125	^Object Oriented Programming I	3	
	ITC145	Web Design I	3	
	ITC201	^Relational Database Systems – Fall Only	3	
		Directed Electives (See Below)	17	
			32	
Directed Electives (17 credit hours needed)				
	BUS150	^Business Communication	3	
	ITC130	Introduction to Networks	5	
	ITC150	Linux Administration I	3	
	ITC220	^Programming II – Spring Only	3	
	ITC245	^Web Design II – Fall Only	3	
	ITC255	^Cyber Security – Spring Only	3	
	ITC281	^Systems Project: Programming	3	
	ITC295 <u>or</u> SKL250	^Information Technology Internship <u>or</u> ^Employment Seminar	1-3	
	SKL101	College Orientation	1	
Minimum Required Hours for Certificate			32	

*It is strongly recommended that students successfully complete the Milestone courses as planned on the academic map to ensure completion of the certificate in a timely manner. In addition, if students do not successfully complete the Milestone course(s), they are strongly encouraged to re-enroll in the course(s) the following semester.

**Certificate is granted upon successful completion of all required courses plus directed elective courses totaling a minimum of 32 credit hours.

***Virtual course delivery is available for all "ITC" classes required in this degree program and for many other required classes. Talk to your program advisor to learn which courses are offered in the virtual delivery format.

****Note for all Information Technology AAS degrees and certificates (32 credit hour and Certificates of Specialization): A grade of "C" or better must be achieved in all required ITC courses (course prefix "ITC") to earn an AAS degree or 32 credit hour certificate).

^Please refer to the course descriptions for pre/co-requisite and placement information. You can only register for these courses if you have met the prerequisite, placed into the course and/or enroll in the co-requisite course(s).