

COMPUTER PROGRAMMING (AS DEGREE S7302)

Business Division Degree S7302

The A.S. Degree in Computer Programming is designed to prepare students for a career in computer programming. The degree offers a balanced set of classes that provides students with client, server and database programming skills required by the industry. Emphasis is placed on object-oriented programming applications, configuring servers, creating and navigating databases, and reusable software components. Students will demonstrate the ability to design and implement business environment applications that will contain the front end user interface and back end database. Student in this program select one of the following three programming language concentrations: C++, Visual Basic.NET or Java. Career opportunities available after the completion of this degree include programming for systems, mobile devices, device drivers and software engineering. Students wishing a bachelor's degree (transfer program) should meet with a counselor or advisor to discuss transferability of courses.

This degree requires the completion of General Education (<https://catalog.mtsac.edu/programs/degrees-certificates/#gerequisitestext>) coursework plus the following:

Required Courses

Course Prefix	Course Name	Units
Core Courses		
CISB 11	Computer Information Systems	3.5
CISB 15	Microcomputer Applications	3.5
CISM 11	Systems Analysis and Design	3.5
CISN 21	Windows Operating System	3 - 3.5
or CISN 31 & 31L	Linux Operating System and Linux Operating System Laboratory	
CISP 10	Principles of Object-Oriented Design	2.5
Choose from one of the following groups:		3.5
CISD 11 & 11L	Database Management - Microsoft Access and Database Management - Microsoft Access Laboratory	
Or		
CISD 21 & 21L	Database Management - Microsoft SQL Server and Database Management - Microsoft SQL Server Laboratory	
Or		
CISD 31 & 31L	Database Management - Oracle and Database Management - Oracle Laboratory	
Required Electives		
Choose one of the following concentrations:		6.5 - 10.5
C++		
CISP 31	Programming in C++	
CISP 31L	Programming in C++ Laboratory	
CISP 34	Advanced C++ Programming	
CISP 34L	Advanced C++ Programming Laboratory	
Java		
CISP 21	Programming in Java	
CISP 21L	Programming in Java Laboratory	
CISP 24	Advanced Java Programming	
CISP 24L	Advanced Java Laboratory	

Mobile

CISP 52	Mobile Device Programming
CISP 52L	Mobile Device Programming Laboratory
CISP 53	iOS Programming
CISP 53L	iOS Programming Laboratory
CISP 54	Programming for Android Devices
CISP 54L	Android Programming Laboratory

Web

CISW 17	HTML, CSS, and JavaScript Programming
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And choose one from the following options:

CISW 21	Secure Web Programming with ASP.NET
CISW 21L	Secure Web Programming with ASP.NET Laboratory

Or

CISW 24	Secure Web Server Programming in Python
CISW 24L	Secure Web Server Programming in Python Laboratory

Or

CISW 31	Secure Web Server Programming in PHP
CISW 31L	Secure Web Server Programming in PHP Laboratory

Total Units 26-30.5

CIS Program Website (<http://www.mtsac.edu/cis/>)

Program Learning Outcomes

Upon successful completion of this program, a student will be able to:

- Display data from related database tables.
- Update a SQL Server database.

Review Student Learning Outcomes (SLOs) (<http://www.mtsac.edu/instruction/outcomes/sloinfo.html>) for this program.

Looking for guidance? A counselor can help. This Guided Pathways for Success (GPS) is a suggested sequence of coursework needed for program completion. It is not an official educational plan. Schedule an appointment (<https://esars2012.mtsac.edu/appointments/counseling/eSARS.asp?WCI=Init&WCE=Settings>) with a counselor or advisor as soon as possible to create an individualized Mountie Academic Plan (MAP) specific to your goals and needs.

C++ Concentration

Course	Title	Units
Fall Term 1		
CISB 11	Computer Information Systems	3.5
CISB 15	Microcomputer Applications	3.5
ENGL 1A	Freshman Composition	4
A/AS PE		1
		Units
		12
Winter Term 1		
SPCH 1A	Public Speaking	4
		Units
		4
Spring Term 1		
CISM 11	Systems Analysis and Design	3.5
A/AS MATH		5
		Units
		8.5

Summer Term 1

A/AS ARTS		3
AA/S ELECT	Degree Appl Course (Elective)	3
Elective: Degree applicable unit to reach 60 ⁰		
Units		6

Fall Term 2

CISP 10	Principles of Object-Oriented Design	2.5
Completion of CISD 21/L, CIS 31/L and ¹		
CISP 34/34L Certificate: Programming in C++ ⁴		
N0634 ⁴		
Units		2.5

Winter Term 2

A/AS SELF		3
Units		3

Spring Term 2

A/AS AMIST		3
A/AS SCNCE		3
A/AS HUM		3
A/AS BEH		3
Computer Programming, AS S7302 ²		
Certificate: Programming C++ N0634 as noted above ⁴		
Submit petition to Admissions Records <small>Submit petition to Admissions Records</small>		
Units		12
Total Units		48

Java Concentration

Course	Title	Units
Fall Term 1		
CISB 11	Computer Information Systems	3.5
CISB 15	Microcomputer Applications	3.5
ENGL 1A	Freshman Composition	4
A/AS PE		1
Units		12

Winter Term 1

SPCH 1A	Public Speaking	4
Units		4

Spring Term 1

CISM 11	Systems Analysis and Design	3.5
A/AS MATH		5
Units		8.5

Summer Term 1

A/AS ARTS		3
AA/S ELECT	Degree Appl Course (Elective)	3
Elective: Degree applicable unit to reach 60 ⁰		
Units		6

Fall Term 2

CISP 10	Principles of Object-Oriented Design	2.5
Units		2.5

Winter Term 2

A/AS SELF		3
Units		3

Spring Term 2

A/AS AMIST		3
A/AS HUM		3
A/AS SCNCE		3
A/AS BEH		3
Units		12
Total Units		48

Mobile Concentration

Course	Title	Units
Fall Term 1		
CISB 11	Computer Information Systems	3.5
CISP 10	Principles of Object-Oriented Design	2.5
ENGL 1A	Freshman Composition	4
A/AS PE		1
Units		11

Winter Term 1

A/AS SELF		3
CISB 15	Microcomputer Applications	3.5
Units		6.5

Spring Term 1

CISM 11	Systems Analysis and Design	3.5
CISP 52	Mobile Device Programming	3
CISP 52L	Mobile Device Programming Laboratory	.5
A/AS MATH		5
Units		12

Summer Term 1

SPCH 1A	Public Speaking	4
Units		4

Fall Term 2

CISP 53	iOS Programming	3
CISP 53L	iOS Programming Laboratory	.5
A/AS ARTS		3
Units		6.5

Winter Term 2

A/AS HUM		3
Units		3

Spring Term 2

CISP 54	Programming for Android Devices	3
CISP 54L	Android Programming Laboratory	.5
A/AS AMIST		3
A/AS BEH		3
A/AS SCNCE		3
Computer Programming (Mobile), AS S7302 ²		
Submit petition to Admissions Records <small>Submit petition to Admissions Records</small>		
Units		12.5
Total Units		55.5

Web Concentration

Course	Title	Units
Fall Term 1		
CISB 11	Computer Information Systems	3.5
CISP 10	Principles of Object-Oriented Design	2.5
ENGL 1A	Freshman Composition	4
A/AS PE		1
	Units	11
Winter Term 1		
A/AS ARTS		3
CISB 15	Microcomputer Applications	3.5
	Units	6.5
Spring Term 1		
CISM 11	Systems Analysis and Design	3.5
A/AS MATH		5
	Units	8.5
Summer Term 1		
SPCH 1A	Public Speaking	4
	Units	4
Fall Term 2		
A/AS SELF		3
CISW 17	HTML, CSS, and JavaScript Programming	3
	Units	6
Winter Term 2		
AA/S ELECT	Degree Appl Course (Elective)	3
	Degree applicable elective to meet 60 degree units ⁰	
	Units	3
Spring Term 2		
A/AS SCNCE		3
A/AS HUM		3
A/AS AMIST		3
A/AS BEH		3
	Computer Programming (Web) AS S7302 ²	
	Submit petition to Admissions Records ^{Submit petition to Admissions Records}	
	Units	12
	Total Units	51