



Computer Programming and Analysis – Internet of Things (IoT) Applications

Associate in Science | Code: 25076 | 60 credits

CIP (1511020101)

Effective Term: Spring 2026 (2263)

The Associate in Science in Computer Programming and Analysis with an IoT Application concentration provides students with a comprehensive foundation in the technologies driving today's smart, connected world. IoT connects everyday devices to the internet to collect, exchange, and analyze data, enabling innovation across industries. This degree program emphasizes programming, database design, embedded systems, cloud platforms, and securing IoT systems. Students gain hands-on experience developing IoT solutions that integrate data analytics and artificial intelligence. Graduates are prepared to enter the workforce where IoT and emerging technologies converge.

GENERAL EDUCATION REQUIREMENTS (15.00 Credits)

COMMUNICATIONS (3.00 credits)

ENC 1101	English Composition 1	(3 credits)	Prerequisite: Student must meet the Developmental Education reading and writing requirements in State Rule 6A-10.0315 (by course, placement score, or eligible exemption).
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HUMANITIES (3.00 credits)

ARH 1000	Art Appreciation	(3 credits)	
HUM 1020	Introduction to Humanities	(3 credits)	
LIT 2000	Introduction to Literature	(3 credits)	Prerequisite: ENC 1101
MUL 1010	Music Appreciation	(3 credits)	
PHI 2010	Introduction to Philosophy	(3 credits)	
THE 2000	Theatre Appreciation	(3 credits)	

MATHEMATICS (3.00 credits)

MAC 1105	College Algebra	(3 credits)	Prerequisite: MAT 1033*
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*Note: Students must seek advisement for proper mathematics course from discipline chairperson.

NATURAL SCIENCE (3.00 credits)

AST 1002	Descriptive Astronomy	(3 credits)
BSC 1005	General Education Biology	(3 credits)
CHM 1020	General Education Chemistry	(3 credits)
ESC 1000	General Education Earth Science	(3 credits)
EVR 1001	Introduction to Environmental Science	(3 credits)
GLY 1010	Physical Geology	(3 credits)
OCE 1001	Introduction to Oceanography	(3 credits)
PHY 1020	General Education Physics	(3 credits)

SOCIAL SCIENCE (3.00 credits)

AMH 2010	History of the US to 1877	(3 credits)
AMH 2020	History of the US Since 1877	(3 credits)
POS 2041	American Federal Government	(3 credits)

COMPUTER COMPETENCY

Test type(s) needed:

Computer Competency Test (CCT)

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CGS 1060C Introduction to Computer Technology and Applications

MAJOR COURSE REQUIREMENTS (21.00 Credits)

CGS 1060C	Introduction to Computer Technology and Applications	(4 credits)	
CGS 1540C	Database Concepts and Design	(4 credits)	
CIS 2331	Systems Analysis, Design and Implementation	(5 credits)	
COP 1334	Introduction to C++ Programming	(4 credits)	
COP 2800	Java Programming	(4 credits)	Prerequisites: COP 1047C, COP 1334, or COP 2270

PROGRAM CONCENTRATION CORE (24.00 Credits)

CEN 2211	C/C++ Programming for Embedded Devices	(4 credits)	
CEN 2212C	Introduction to Programing the IoT	(4 credits)	Prerequisite: CEN 2211
CIS 2010C	Introduction to Internet of Things Networking and Security	(4 credits)	
CIS 2011C	Introduction to Cloud Computing for Internet of Things	(4 credits)	Prerequisite: CEN 2211
CIS 2012C	Introduction to Data Analytics and AI for the Internet of Things	(4 credits)	Prerequisites: CIS 2010C, CIS 2011C
CIS 2013C	Internet of Things Applications	(4 credits)	Prerequisites: CIS 2010C, CIS 2011C