

DIGITAL & INFORMATION TECHNOLOGY - COE

DIGITAL & INFORMATION TECHNOLOGY

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Academic Degrees and Certificates

Associate of Arts in COMPUTER INFORMATION SYSTEMS

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1324	Mathematics for Business & Social Sciences	3
BCIS	1305	Business Computer Applications	3
HIST	#3## 1	American History Elective	3
Semester Total			15

Second Semester - Spring

ENGL	1302	Composition II	3
MATH	1325	Calculus for Business & Social Sciences	3
COSC	1436	Programming Fundamentals I	4
XXXX	#3## 1	Life & Physical Sciences Elective	3
HIST	#3## 1	American History Elective	3
Semester Total			16

SECOND YEAR

First Semester - Fall			SCH
MATH	1342	Elementary Statistical Methods	3
COSC	1437	Programming Fundamentals II	4
ECON	2301	Principles of Macroeconomics OR	
ECON	2302	Principles of Microeconomics	3
GOVT	2305	Federal Government	3
XXXX	#3## 1	Creative Arts Elective	3
Semester Total			16

Second Semester - Spring

ACCT	2301	Principles of Financial Accounting	3
COSC	2425	Computer Organization	4
XXXX	#3## 1	Language, Philosophy, & Culture Elective	3
GOVT	2306	Texas Government	3
Semester Total			13

Total Minimum Credits for the AA Degree **60**

¹A list of electives appears in the Core Curriculum section of this catalog.

Academic Degrees and Certificates

Associate of Science in COMPUTER SCIENCE

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	2412	Pre-Calculus Math	4
COSC	1436	Programming Fundamentals I	4
HIST	#3## ¹	American History Elective	3
Semester Total			17

Second Semester - Spring

ENGL	1302	Composition II	3
MATH	2413	Calculus I	4
COSC	1437	Programming Fundamentals II	4
HIST	#3## ¹	American History Elective	3
Semester Total			14

SECOND YEAR

First Semester - Fall			SCH
MATH	2414	Calculus II	4
PHYS	2325	University Physics I (Lecture)	3
PHYS	2125	University Physics I (Lab)	1
COSC	2436	Programming Fundamentals III	4
GOVT	2305	Federal Government	3
Semester Total			15

Second Semester - Spring

PHYS	2326	University Physics II (Lecture)	3
PHYS	2126	University Physics II (Lab)	1
COSC	2425	Computer Organization	4
XXXX	#3## ¹	Social & Behavioral Sciences Elective	3
GOVT	2306	Texas Government	3
Semester Total			14

Total Minimum Credits for the AS Degree **60**

¹A list of electives appears in the Core Curriculum section of this catalog.

Workforce Degrees and Certificates

Computer Programming

COMPUTER PROGRAMMING - APPLICATIONS DEVELOPMENT - MICROSOFT C# SPECIALIZATION

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
BCIS	1305	Business Computer Applications	3
COSC	1436	Programming Fundamentals I (with C#)	4
Semester Total			16

Second Semester - Spring

MATH	1324	Mathematics for Business & Social Sciences	3
COSC	1437	Programming Fundamentals II (with C#)	4
ITSE	1346	Database Theory & Design OR	
ITSE	1345	Introduction to Oracle SQL	3
XXXX	#3## ¹	Humanities/Fine Arts Elective	3
Semester Total			13

Third Semester - Summer

XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
Semester Total			3

SECOND YEAR

First Semester - Fall			SCH
ITSE	2402	Intermediate Web Programming	4
ITSE	2471	Mobile Application Programming I	4
XXXX	#3## ¹	General Education Elective	3
XXXX	#3## ²	Program Approved Business Elective	3
Semester Total			14

Workforce Degrees and Certificates

Second Semester - Spring

INEW	2434	Advanced Web Programming	4
ITSE	2453	Advanced C# Programming	4
ITSE	1380	Cooperative Education - Computer Programming/Programmer, General OR	
INEW	2332	Comprehensive Software Project: Coding, Testing, & Implementation (Capstone)	3
XXXX	#3## ³	Program Approved IT Elective	3
Semester Total			14
Total Minimum Credits for the AAS Degree			60

¹ A list of electives appears in the Core Curriculum section of this catalog.

² ACCT 2301, 2302; BMGT 1301, 1303, 1325; BUSG 1301, 2305, 2317; ECON 1301, 2301, 2302; HRPO 1311, 2307.

³ COSC 2436; GISC 1411; INEW 2475; ITNW 1313; ITSE 2333, 2471; ITSY 1342.

Workforce Degrees and Certificates

COMPUTER PROGRAMMING - APPLICATIONS DEVELOPMENT - MICROSOFT C++ SPECIALIZATION

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
BCIS	1305	Business Computer Applications	3
COSC	1436	Programming Fundamentals I (with C++)	4
Semester Total			16

Second Semester - Spring

MATH	1324	Mathematics for Business & Social Sciences	3
COSC	1437	Programming Fundamentals II (with C++)	4
ITSE	1346	Database Theory & Design OR	
ITSE	1345	Introduction to Oracle SQL	3
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
Semester Total			13

Third Semester - Summer

XXXX	#3## ¹	Humanities/Fine Arts Elective	3
Semester Total			3

SECOND YEAR

First Semester - Fall			SCH
ITSE	2402	Intermediate Web Programming	4
COSC	2425	Computer Organization & Machine Language	4
COSC	2436	Programming Fundamentals III (with C++)	4
XXXX	#3## ²	Program Approved Business Elective	3
Semester Total			15

Workforce Degrees and Certificates

Second Semester - Spring

ITSE	2343	Advanced Mobile Programming OR	
INEW	2434	Advanced Web Programming	4
ITSE	1380	Cooperative Education - Computer Programming/Programmer, General OR	
INEW	2332	Comprehensive Software Project: Coding, Testing, & Implementation (Capstone)	3
XXXX	#3## ¹	General Education Elective	3
XXXX	#3## ³	Program Approved IT Elective	3
Semester Total			13
Total Minimum Credits for the AAS Degree			60

¹ A list of electives appears in the Core Curriculum section of this catalog.

² ACCT 2301, 2302; BMGT 1301, 1303, 1325; BUSG 1301, 2305, 2317; ECON 1301, 2301, 2302; HRPO 1311, 2307.

³ COSC 2436; GISC 1411; INEW 2475; ITNW 1313; ITSE 2333, 2471; ITSY 1342.

Workforce Degrees and Certificates

COMPUTER PROGRAMMING - APPLICATIONS DEVELOPMENT - JAVA SPECIALIZATION

Associate of Applied Science

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
BCIS	1305	Business Computer Applications	3
COSC	1436	Programming Fundamentals I (with Java)	4
Semester Total			16

Second Semester - Spring

MATH	1324	Mathematics for Business & Social Sciences	3
COSC	1437	Programming Fundamentals II (with Java)	4
ITSE	1346	Database Theory & Design OR	
ITSE	1345	Introduction to Oracle SQL	3
XXXX	#2## ¹	General Education Elective	2
Semester Total			12

Third Semester - Summer

XXXX	#3## ¹	Humanities/Fine Arts Elective	3
Semester Total			3

SECOND YEAR

First Semester - Fall

			SCH
ITSE	2402	Intermediate Web Programming	4
COSC	2436	Programming Fundamentals III (with Java)	4
INEW	2438	Advanced Java Programming	4
XXXX	#3## ²	Program Approved Business Elective	3
Semester Total			15

Workforce Degrees and Certificates

Second Semester - Spring

INEW	2434	Advanced Web Programming	4
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
ITSE	1380	Cooperative Education - Computer Programming/Programmer, General OR	3
INEW	2332	Comprehensive Software Project: Coding, Testing, & Implementation (Capstone)	3
XXXX	#4## ³	Program Approved IT Elective	4
Semester Total			14
Total Minimum Credits for the AAS Degree			60

¹ A list of electives appears in the Core Curriculum section of this catalog.

² ACCT 2301, 2302; BMGT 1301, 1303, 1325; BUSG 1301, 2305, 2317; ECON 1301, 2301, 2302; HRPO 1311, 2307.

³ COSC 2436; GISC 1411; INEW 2475; ITNW 1313; ITSE 2333, 2471; ITSY 1342.

Workforce Degrees and Certificates

COMPUTER PROGRAMMING - DATABASE ADMINISTRATOR

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
ITSC	1309	Integrated Software Applications I OR	
BCIS	1305	Business Computer Applications	3
COSC	1436	Programming Fundamentals I	4
MATH	1314	College Algebra	3
Semester Total			13

Second Semester - Spring

ITSC	1307	UNIX Operating System I OR	
ITMT	1358	Windows Client Operating System	3
ITSE	1345	Introduction to Oracle SQL	3
ITSE	1456	Extensible Markup Language (XML)	4
Semester Total			10

Third Semester - Summer

ITSE	2456	Oracle Database Administration I OR	
ITMT	2403	Administering a Microsoft SQL Server Database	4
Semester Total			4

SECOND YEAR

First Semester - Fall

			SCH
ITSE	2458	Oracle Database Administration II OR	
ITSE	2333	Implementing a Database on Microsoft SQL Server (Capstone)	4
Semester Total			4

Total Minimum Credits for the Level 2 Certificate **31**

Workforce Degrees and Certificates

COMPUTER PROGRAMMING - MOBILE APPLICATION DEVELOPER

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
ITSC	1309	Integrated Software Applications I OR	
BCIS	1305	Business Computer Applications	3
COSC	1436	Programming Fundamentals I	4
MATH	1314	College Algebra	3
Semester Total			13

Second Semester - Spring

COSC	1437	Programming Fundamentals II	4
ITSE	1346	Database Theory & Design OR	
ITSE	1345	Introduction to Oracle SQL	3
ITSE	2471	Mobile Application Programming I	4
Semester Total			11

SECOND YEAR

First Semester - Fall

ITSE	2402	Intermediate Web Programming	4
ITSE	2472	Mobile Application Programming II (Capstone)	4
Semester Total			8

Total Minimum Credits for the Level 2 Certificate **32**

Workforce Degrees and Certificates

COMPUTER PROGRAMMING - SHAREPOINT ADMINISTRATOR

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
COSC	1436	Programming Fundamentals I	4
ITSC	1319	Internet/Web Page Development	3
MATH	1314	College Algebra	3
Semester Total			13

Second Semester - Spring

INEW	2475	SharePoint Administration I	4
ITSE	1346	Database Theory & Design OR	3
ITSE	1345	Introduction to Oracle SQL	3
ITSE	2402	Intermediate Web Programming	4
Semester Total			11

SECOND YEAR

First Semester - Fall

INEW	1340	ASP.NET Programming	3
INEW	2476	SharePoint Administration II (Capstone)	4
Semester Total			7

Total Minimum Credits for the Level 2 Certificate **31**

Workforce Degrees and Certificates

COMPUTER PROGRAMMING - WEB APPLICATION DEVELOPER

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
COSC	1436	Programming Fundamentals I	4
ITSC	1319	Internet/Web Page Development	3
MATH	1314	College Algebra	3
Semester Total			13

Second Semester - Spring

ITSE	2402	Intermediate Web Programming	4
COSC	1437	Programming Fundamentals II	4
ITSC	1309	Integrated Software Applications I OR	
BCIS	1305	Business Computer Applications	3
ITSC	1307	UNIX Operating System I OR	
ITMT	1358	Windows Client Operating System	3
Semester Total			14

SECOND YEAR

First Semester - Fall

ITSE	1346	Database Theory & Design OR	
ITSE	1345	Introduction to Oracle SQL	3
Semester Total			3

Total Minimum Credits for the Level 2 Certificate **30**

Workforce Degrees and Certificates

Computer Systems Networking

COMPUTER SYSTEMS NETWORKING - CISCO SPECIALIZATION

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
ITSC	1309	Integrated Software Applications I OR	
BCIS	1305	Business Computer Applications	3
ITSC	1316	Linux Installation & Configuration OR	
ITSC	1307	UNIX Operating System I OR	
ITMT	1358	Windows Client Operating System	3
Semester Total			15

Second Semester - Spring

ITSC	1319	Internet/Web Page Development	3
ITSC	1425	Personal Computer Hardware	4
ITCC	1414	CCNA 1: Introduction to Networks	4
ITSY	1342	Information Technology Security	3
Semester Total			14

Third Semester - Summer

ITCC	1440	CCNA 2: Routing & Switching Essentials	4
XXXX	#3## ¹	Humanities/Fine Arts Elective	3
Semester Total			7

SECOND YEAR

First Semester - Fall			SCH
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
ITCC	2412	CCNA 3: Scaling Networks	4
XXXX	#3## ¹	General Education Elective	3
ITSC	1358	UNIX System Administration I	3
Semester Total			13

Second Semester - Spring

ITCC	2441	CCNA Security	4
ITCC	2413	CCNA 4: Connecting Networks	4
ITNW	1380	Cooperative Education - Computer Systems Networking & Telecommunications OR	
ITNW	2335	Network Troubleshooting & Support (Capstone)	3
Semester Total			11

Total Minimum Credits for the AAS Degree **60**

¹ A list of electives appears in the Core Curriculum section of this catalog.

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - CERTIFIED CISCO NETWORK PROFESSIONAL (CCNP)

Certificate - Level 1

FIRST YEAR

First Semester - Fall

			SCH
ITCC	1414	CCNA 1: Introduction to Networks	4
Semester Total			4

Second Semester - Spring

ITCC	1440	CCNA 2: Routing & Switching Essentials	4
ITCC	2412	CCNA 3: Scaling Networks	4
Semester Total			8

Third Semester - Summer

ITCC	2413	CCNA 4: Connecting Networks	4
Semester Total			4

SECOND YEAR

First Semester - Fall

ITCC	2454	CCNP R&S ROUTE	4
ITCC	2455	CCNP R&S SWITCH	4
Semester Total			8

Second Semester - Spring

ITCC	2456	CCNP R&S TSHOOT (Capstone)	4
ITSC	1307	UNIX Operating System I	3
Semester Total			7

Total Minimum Credits for the Level 1 Certificate **31**

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - CERTIFIED CISCO NETWORK ASSOCIATE (CCNA)

Certificate - Level 1

First Semester - Fall

ITCC	1414	CCNA 1: Introduction to Networks	SCH	4
Semester Total				4

Second Semester - Spring

ITCC	1440	CCNA 2: Routing & Switching Essentials	4
ITCC	2412	CCNA 3: Scaling Networks	4
Semester Total			8

Third Semester - Summer

ITCC	2413	CCNA 4: Connecting Networks (Capstone)	4
Semester Total			4

Total Minimum Credits for the Level 1 Certificate **16**

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - CYBER SECURITY

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
BCIS	1305	Business Computer Applications OR	
ITMT	1358	Windows Client Operating System	3
ITSC	1307	UNIX Operating System I	3
Semester Total			15

Second Semester - Spring

XXXX	#3## ¹	Humanities/Fine Arts Elective	3
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	4
ITSY	1342	Information Technology Security	3
COSC	1436	Programming Fundamentals I	4
Semester Total			17

Third Semester - Summer

ITMT	1357	Administering a Windows Server Operating System	3
Semester Total			3

SECOND YEAR

First Semester - Fall			SCH
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
ITNW	1313	Computer Virtualization	3
ITSY	2330	Intrusion Detection	3
ITSY	2401	Firewalls & Network Security	4
Semester Total			13

Second Semester - Spring

ITSY	2443	Computer System Forensics	4
ITSY	1491	Special Topics in Information Technology/Security	4
ITSY	2471	Cyber Competitions (Capstone)	4
Semester Total			12

Total Minimum Credits for the AAS Degree **60**

¹ A list of electives appears in the Core Curriculum section of this catalog.

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - CYBER SECURITY

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
ITSC	1307	UNIX Operating System I	3
BCIS	1305	Business Computer Applications OR	
ITMT	1358	Windows Client Operating System	3
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	4
Semester Total			13

Second Semester - Spring

ITSY	1342	Information Technology Security	3
ITNW	1313	Computer Virtualization	3
Semester Total			6

SECOND YEAR

First Semester - Fall

			SCH
ITSY	2401	Firewalls & Network Security	4
ITSY	2330	Intrusion Detection	3
ITSY	2443	Computer System Forensics	4
Semester Total			11

Second Semester - Spring

ITSY	1491	Special Topics in Information Technology/Security	4
ITSY	2471	Cyber Competitions (Capstone)	4
Semester Total			8

Total Minimum Credits for the Level 2 Certificate **38**

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - CYBER SECURITY

Certificate - Level 1

First Semester - Fall

			SCH
ITSC	1307	UNIX Operating System I	3
ITMT	1358	Windows Client Operating System	3
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	4
Semester Total			10

Second Semester - Spring

ITSY	1342	Information Technology Security (Capstone)	3
ITSY	2330	Intrusion Detection	3
Semester Total			

Total Minimum Credits for the Level 1 Certificate **16**

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - HELP DESK SPECIALIZATION

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
ITNW	1425	Fundamentals of Networking Technologies	4
Semester Total			13

Second Semester - Spring

XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
ITNW	1492	Special Topics in Computer Systems Networking & Telecommunications	4
ITSC	2339	Personal Computer Help Desk Support	3
XXXX	#3## ¹	Humanities/Fine Arts Elective	3
ITNW	1308	Implementing & Supporting Client Operating Systems	3
Semester Total			16

Third Semester - Summer

ITSY	1342	Information Technology Security	3
ITSC	1307	UNIX Operating System I	3
Semester Total			6

SECOND YEAR

First Semester - Fall			SCH
XXXX	#3## ¹	General Education Elective	3
ITSC	1319	Internet/Web Page Development	3
ITMT	2302	Windows Server 2008 Active Directory Configuration	3
ITSC	1358	UNIX System Administration I	3
Semester Total			12

Second Semester - Spring

ITNW	1313	Computer Virtualization	3
ITNW	1392	Special Topics in Computer Systems Networking & Telecommunications	3
ITMT	2301	Windows Server 2008 Network Infrastructure Configuration (Capstone)	3
ITSC	1447	UNIX System Administration II	4
Semester Total			13

Total Minimum Credits for the AAS Degree **60**

¹ A list of electives appears in the Core Curriculum section of this catalog.

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - HELP DESK

Certificate - Level 2

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ITNW	1313	Computer Virtualization	3
ITNW	1358	Network+	3
ITNW	1308	Implementing & Supporting Client Operating Systems	3
Semester Total			12

Second Semester - Spring

ITSC	1307	UNIX Operating System I	3
ITSY	1342	Information Technology Security	3
ITMT	2302	Windows Server 2008 Active Directory Configuration	3
Semester Total			9

SECOND YEAR

First Semester - Fall			SCH
ITSC	1358	UNIX System Administration I	3
ITSC	1447	UNIX System Administration II (Capstone)	4
ITMT	#3## ¹	Computer Systems & Networking Elective	3
Semester Total			10
Total Minimum Credits for the Level 2 Certificate			31

¹ Consult with an advisor to select a Computer Systems and Networking elective.

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - HELP DESK

Certificate - Level 1

First Semester - Fall

			SCH
ITSC	1307	UNIX Operating System I	3
ITNW	1358	Network+	3
ITNW	1308	Implementing & Supporting Client Operating Systems	3
Semester Total			9

Second Semester - Spring

ITMT	2302	Windows Server 2008 Active Directory Configuration	3
ITSY	1342	Information Technology Security	3
ITSC	1358	UNIX System Administration I (Capstone)	3
ITNW	1313	Computer Virtualization	3
Semester Total			12

Total Minimum Credits for the Level 1 Certificate **21**

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - INFORMATION TECHNOLOGY CORE

Certificate - Level 1

First Semester - Fall			SCH
ITSC	1301	Introduction to Computers	3
ITSC	1425	Personal Computer Hardware	4
ITSC	1321	Intermediate PC Operating Systems	3
ITNW	1313	Computer Virtualization	3
Semester Total			13
Second Semester - Spring			
ITNW	1425	Fundamentals of Networking Technologies	4
ITSE	1402	Computer Programming - Swift I	4
ITSY	1342	Information Technology Security	3
ITSC	2339	Personal Computer Help Desk Support (Capstone)	3
Semester Total			14
Total Minimum Credits for the Level 1 Certificate			27

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - LINUX SERVER ADMINISTRATOR SPECIALIZATION

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
ITSC	1316	Linux Installation & Configuration	3
ITSC	1307	UNIX Operating System I	3
Semester Total			15

Second Semester - Spring

ENGL	1302	Composition II	3
ITSC	1458	UNIX System Administration I	4
ITNW	1358 ¹	Network+ OR	
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	4
XXXX	#3## ²	Humanities/Fine Arts Elective	3
Semester Total			14

Third Semester - Summer

ITSC	1319	Internet/Web Page Development	3
ITSY	2401	Firewalls & Network Security	4
Semester Total			7

SECOND YEAR

First Semester - Fall			SCH
ITSC	1425	Personal Computer Hardware	4
ITSC	1447	UNIX System Administration II	4
ITNW	1313	Computer Virtualization	3
XXXX	#3## ²	Humanities/Fine Arts Elective	3
Semester Total			14

Second Semester - Spring

ITSC	2425	Advanced Linux (Capstone)	4
XXXX	#3## ³	Program Approved Business Elective	3
XXXX	#3## ²	Social/Behavioral Sciences Elective	3
Semester Total			10

Total Minimum Credits for the AAS Degree **60**

¹ Students who choose Network+ must also complete a one-hour elective.

² A list of electives appears in the Core Curriculum section of this catalog.

³ Consult with an advisor to select a Program Approved Business Elective.

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - LINUX ADMINISTRATOR

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
ITSC	1425	Personal Computer Hardware	4
ITSC	1316	Linux Installation & Configuration	3
ITSC	1307	UNIX Operating System I	3
Semester Total			13

Second Semester - Spring

ITSC	1458	UNIX System Administration I	4
ITNW	1358	Network+ OR	
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	3
Semester Total			7

Third Semester - Summer

ITSC	1319	Internet/Web Page Development	3
ITSC	1447	UNIX System Administration II	4
Semester Total			7

SECOND YEAR

First Semester - Fall

			SCH
ITSC	2339	Personal Computer Help Desk Support	3
ITNW	1313	Computer Virtualization	3
ITSC	2425	Advanced Linux (Capstone)	4
Semester Total			10

Total Minimum Credits for the Level 2 Certificate **37**

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - LINUX SYSTEM ADMINISTRATION

Certificate - Level 1

First Semester - Fall

			SCH
ITSC	1425	Personal Computer Hardware	4
ITSC	1307	UNIX Operating System I	3
Semester Total			7

Second Semester - Spring

ITSC	1316	Linux Installation & Configuration	3
ITSC	1458	UNIX System Administration I (Capstone)	4
Semester Total			7

Third Semester - Summer

ITSC	1319	Internet/Web Page Development	3
ITNW	1358	Network+ OR	
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	3
Semester Total			6

Total Minimum Credits for the Level 1 Certificate **20**

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - MICROSOFT SERVER ADMINISTRATION SPECIALIZATION

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ITSC	1309	Integrated Software Applications I OR	
BCIS	1305	Business Computer Applications	3
MATH	1314	College Algebra	3
ITSC	1425	Personal Computer Hardware	4
ITMT	1358	Windows Client Operating System	3
Semester Total			16

Second Semester - Spring

ENGL	1301	Composition I	3
ITSY	1342	Information Technology Security	3
ITMT	2305	Designing & Implementing a Server Infrastructure	3
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	4
Semester Total			13

Third Semester - Summer

SPCH	#3## ²	Speech Elective	3
ITSC	1319	Internet/Web Page Development	3
Semester Total			6

SECOND YEAR

First Semester - Fall			SCH
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
ITNW	1313	Computer Virtualization	3
ITMT	1357	Administering a Windows Server Operating System	3
COSC	1436	Programming Fundamentals I	4
Semester Total			13

Second Semester - Spring

XXXX	#3## ¹	Humanities/Fine Arts Elective	3
ITMT	1305	Configuring Advanced Window Server Operating Systems	3
ITSY	2330	Intrusion Detection	3
ITNW	1380	Cooperative Education - Computer Systems Networking & Telecommunications OR	
ITNW	2335	Network Troubleshooting & Support (Capstone)	3
Semester Total			12

Total Minimum Credits for the AAS Degree **60**

¹ A list of electives appears in the Core Curriculum section of this catalog.

² SPCH Electives: SPCH 1311, 1321 or 1315.

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - MICROSOFT SERVER ADMINISTRATION

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
ITNW	1358	Network+ OR	
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	3
ITMT	1358	Windows Client Operating System	3

Semester Total

9

Second Semester - Spring

ITMT	2305	Designing & Implementing a Server Infrastructure	3
ITSY	1342	Information Technology Security	3
ITSC	1425	Personal Computer Hardware	4

Semester Total

10

Third Semester - Summer

ITSC	1319	Internet/Web Page Development	3
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Semester Total

3

SECOND YEAR

First Semester - Fall

ITNW	1313	Computer Virtualization	3
ITSY	2330	Intrusion Detection	3
ITMT	1357	Administering a Windows Server Operating System (Capstone)	3

Semester Total

9

Total Minimum Credits for the Level 2 Certificate

31

Workforce Degrees and Certificates

COMPUTER SYSTEMS NETWORKING - MICROSOFT SERVER ADMINISTRATION

Certificate - Level 1

First Semester

			SCH
ITNW	1358	Network+ OR	
ITNW	1425	Fundamentals of Networking Technologies OR	
ITCC	1414	CCNA 1: Introduction to Networks	3
ITMT	1358	Windows Client Operating System	3
ITSC	1309	Integrated Software Applications I OR	
BCIS	1305	Business Computer Applications	3
Semester Total			9

Second Semester - Spring

ITMT	2305	Designing & Implementing a Server Infrastructure (Capstone)	3
ITSY	1342	Information Technology Security	3
ITSC	1425	Personal Computer Hardware	4
Semester Total			10

Total Minimum Credits for the Level 1 Certificate **19**

Workforce Degrees and Certificates

Digital Gaming & Simulation

DIGITAL GAMING & SIMULATION FOR ARTISTS

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
GAME	1306	Design & Creation of Games	3
GAME	1378	Art for 2D Games	3
GAME	1373	Introduction to Perspective Drawing	3
GAME	1336	Introduction to 3D Game Modeling	3
Semester Total			15

Second Semester - Spring

ARTS	1303	Art History I OR	
ARTS	1304	Art History II	3
GAME	1302	Interactive Storyboarding	3
GAME	1375	Principles of Game Concept Art	3
GAME	1303	Introduction to Game Design & Development	3
GAME	2336	Lighting, Shading, & Texture	3
Semester Total			15

Third Semester - Summer

XXXX	#3## ¹	Math/Natural Science Elective	3
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
Semester Total			6

SECOND YEAR

First Semester - Fall			SCH
GAME	1314	Character Sculpting	3
GAME	2332	Project Development I	3
GAME	1374	Introduction to 3D Game Animation	3
GAME	2304	Level Design II	3
Semester Total			12

Workforce Degrees and Certificates

Second Semester - Spring

GAME	2374	3D Rigging for Games & Simulations	3
GAME	2334	Project Development II (Capstone)	3
GAME	2308	Portfolio for Game Development	3
PSYC	2301	General Psychology	3

Semester Total **12**

Total Minimum Credits for the AAS Degree **60**

1 A list of electives appears in the Core Curriculum section of this catalog.

Workforce Degrees and Certificates

DIGITAL GAMING & SIMULATION FOR ARTISTS

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
GAME	1306	Design & Creation of Games	3
GAME	1378	Art for 2D Games	3
GAME	1373	Introduction to Perspective Drawing	3
GAME	1336	Introduction to 3D Game Modeling	3
Semester Total			15

Second Semester - Spring

ARTS	1303	Art History I OR	
ARTS	1304	Art History II	3
GAME	1302	Interactive Storyboarding	3
GAME	1303	Introduction to Game Design & Development	3
GAME	1375	Principles of Game Concept Art	3
GAME	2336	Lighting, Shading, & Texture	3
Semester Total			15

SECOND YEAR

First Semester - Fall

			SCH
GAME	1314	Character Sculpting	3
GAME	1374	Introduction to 3D Game Animation	3
GAME	2304	Level Design II	3
GAME	2332	Project Development I (Capstone)	3
Semester Total			12

Total Minimum Credits for the Level 2 Certificate **42**

Workforce Degrees and Certificates

DIGITAL GAMING & SIMULATION FOR PROGRAMMERS

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
GAME	1306	Design & Creation of Games	3
GAME	1378	Art for 2D Games	3
GAME	1379	Introduction to Game Programming	3
MATH	1314	College Algebra	3
Semester Total			15

Second Semester - Spring

XXXX	#3## ¹	Humanities/Fine Arts Elective	3
GAME	1304	Level Design I	3
GAME	1336	Introduction to 3D Game Modeling	3
GAME	2347	Advanced Game Programming	3
GAME	2302	Mathematical Applications for Game Development	3
Semester Total			15

Third Semester - Summer

GAME	2373	2D Game Programming	3
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
Semester Total			6

SECOND YEAR

First Semester - Fall			SCH
GAME	2319	Game Engine	3
GAME	2304	Level Design II	3
GAME	2332	Project Development I	3
GAME	2342	Game Development Using C++	3
Semester Total			12

Second Semester - Spring

XXXX	#3## ¹	Math/Natural Science Elective	3
GAME	2308	Portfolio for Game Development	3
GAME	2334	Project Development II (Capstone)	3
GAME	2341	Game Scripting	3
Semester Total			12

Total Minimum Credits for the AAS Degree **60**

¹ A list of electives appears in the Core Curriculum section of this catalog.

Workforce Degrees and Certificates

DIGITAL GAMING & SIMULATION FOR PROGRAMMERS

Certificate - Level 2

FIRST YEAR

First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
GAME	1306	Design & Creation of Games	3
GAME	1378	Art for 2D Games	3
GAME	1379	Introduction to Game Programming	3
MATH	1314	College Algebra	3
Semester Total			15

Second Semester - Spring

GAME	1304	Level Design I	3
GAME	1336	Introduction to 3D Game Modeling	3
GAME	2302	Mathematical Applications for Game Development	3
GAME	2347	Advanced Game Programming	3
Semester Total			12

Third Semester - Summer

GAME	2373	2D Game Programming	3
Semester Total			3

SECOND YEAR

First Semester - Fall

GAME	2304	Level Design II	3
GAME	2319	Game Engine	3
GAME	2332	Project Development I (Capstone)	3
GAME	2342	Game Development Using C++	3
Semester Total			12

Total Minimum Credits for the Level 2 Certificate **42**

Workforce Degrees and Certificates

Geographic Information Science

GEOGRAPHIC INFORMATION SCIENCE

Associate of Applied Science

FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
ENGL	1301	Composition I	3
MATH	1314	College Algebra	3
GISC	1411	Introduction to Geographic Information Systems (GIS)	4
Semester Total			13

Second Semester - Spring

GEOG	1301	Physical Geography	3
GISC	1401	Cartography & Geography in Geographical Information Systems (GIS) & Global Positioning Systems	4
GISC	1421	Introduction to Raster-Based Geographic Information Systems (GIS)	4
COSC	1436	Programming Fundamentals I (using Python)	4
Semester Total			15

Third Semester - Summer

ITSE	1345	Introduction to Oracle SQL	3
DFTG	1309	Basic Computer-Aided Drafting	3
Semester Total			6

SECOND YEAR

First Semester - Fall			SCH
GISC	2401	Data Acquisition & Analysis in Geographic Information Systems (GIS)	4
GISC	2250	Scripting for Geographic Information Systems (GIS)	2
GISC	2411	Geographic Information Systems (GIS) Applications	4
XXXX	#3## ¹	Social/Behavioral Sciences Elective	3
Semester Total			13

Second Semester - Spring

GEOL	1403	Physical Geology	4
XXXX	#3## ¹	Humanities/Fine Arts Elective	3
GISC	2359	Web-Served Geographic Information Systems (GIS) (Capstone)	3
GISC	2364	Practicum - Cartography OR	
GISC	2380	Cooperative Education - Cartography OR	
GISC	1491	Special Topics in Cartography	3
Semester Total			13

Total Minimum Credits for the AAS Degree **60**

¹ A list of electives appears in the Core Curriculum section of this catalog.

Workforce Degrees and Certificates

GEOGRAPHIC INFORMATION SCIENCE - ANALYST

Certificate - Level 2

FIRST YEAR

First Semester - Fall

EDUC	1300	Learning Framework	3
GISC	1411	Introduction to Geographic Information Systems (GIS)	4
MATH	1314	College Algebra	3
COSC	1436	Programming Fundamentals I OR	
ITSE	1402	Computer Programming	4
Semester Total			14

Second Semester - Spring

GISC	1401	Cartography & Geography in Geographical Information Systems (GIS) & Global Positioning Systems	4
GISC	1421	Introduction to Raster-Based Geographic Information Systems (GIS)	4
ITSE	1345	Introduction to Oracle SQL	3
Semester Total			11

Third Semester - Summer

GISC	2401	Data Acquisition & Analysis in Geographic Information Systems (GIS)	4
GISC	2411	Geographic Information Systems (GIS) Applications	4
Semester Total			8

SECOND YEAR

First Semester - Fall

GISC	2250	Scripting for Geographic Information Systems (GIS)	2
GISC	2359	Web-Served Geographic Information Systems (GIS) (Capstone)	3
Semester Total			5

Total Minimum Credits for the Level 2 Certificate **38**

Workforce Degrees and Certificates

GEOGRAPHIC INFORMATION SCIENCE - TECHNICIAN

Certificate - Level 1

First Semester - Fall

			SCH
GISC	1411	Introduction to Geographic Information Systems (GIS)	4
ITSE	1402	Computer Programming	4
Semester Total			8

Second Semester - Spring

GISC	1401	Cartography & Geography in Geographical Information Systems (GIS) & Global Positioning Systems (Capstone)	4
GISC	1421	Introduction to Raster-Based Geographic Information Systems (GIS)	4
ITSE	1345	Introduction to Oracle SQL	3
GISC	2364	Practicum - Cartography OR	
GISC	2380	Cooperative Education - Cartography	3
Semester Total			14

Total Minimum Credits for the Level 1 Certificate **22**