



Computer Information Technology Credential: Associate in Applied Science Degree in Computer Information Technology A25260

The Computer Information Technology (CIT) curriculum is designed to prepare graduates for employment with organizations that use computers to process, manage, and communicate information. This is a flexible curriculum that can be customized to meet community information systems needs.

Course work will develop a student's ability to communicate complex technical issues related to computer hardware, software, and networks in a manner that computer users can understand. Classes cover computer operations and terminology, operating systems, database, networking, security, and technical support. Graduates should qualify for employment in entry-level positions with businesses, educational systems, and governmental agencies which rely on computer systems to manage information. Graduates should be prepared to sit for industry-recognized certification exams.

Several pathways (tracks) are provided to allow students to specialize in a specific area of information systems that meets their needs and interests.

Program Length: 4 semesters

Career Pathway Options: Specialized Tracks of Study include: Database Programming, Network Technologist, Software Specialist, and Web Development

Program Sites: Lee Campus - Day Program and Night "Career Centered" Flexible Program

Course Requirements for Computer Information Technology

A. General Education Courses (16 SHC)

ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
ENG 114	Professional Research and Reporting	3-0-3
*HUM 115	Critical Thinking	3-0-3
**MAT 140	Survey of Mathematics	3-0-3
***PSY 150	General Psychology	3-0-3

*Students may substitute any approved humanities elective.

**Students may substitute MAT 115.

***Students may substitute any approved Social/Behavioral Science elective.

B. Required Major Core Courses (35/36 SHC)

*CIS 110	Introduction to Computers	2-2-3
**CTS 115	Information Systems Business Concept	3-0-3
***NET 110	Networking Concepts	2-2-3
CIS 115	Introduction to Programming and Logic	2-3-3
CTS 120	Hardware/Software Support	2-3-3
CTS 285	Systems Analysis and Design	3-0-3
DBA 110	Database Concepts	2-3-3
NOS 110	Operating System Concepts	2-3-3
NOS 130	Windows Single User	2-2-3

NOS 230	Windows Administration I	2-2-3
SEC 110	Security Concepts	3-0-3
CTS 289	System Support Project	1-4-3

*May substitute CIS 111 (2 SHC) – Nontransferable

**May substitute BUS 110 – Introduction to Business

***May substitute NET 125 – Networking Basics

Major Electives – Select Track of Study

Database Programming (15 SHC)

DBA 115	Database Applications	2-2-3
DBA 120	Database Programming I	2-2-3
CSC 139	Visual Basic Programming	2-3-3
CSC 151	Java Programming	2-3-3
NOS 120	Linux/UNIX Single User	2-2-3

Network Technologist (15 SHC)

NOS 120	Linux/UNIX Single User	2-2-3
CTS 220	Advanced Hard/Software Support	2-3-3
NET 111	Internetwork Arch. and Design	2-2-3
NOS 231	Windows Administration II	2-2-3
CTS 286	Network Support	2-2-3

Software Specialist (16 SHC)

DBA 115	Database Applications	2-2-3
CSC 139	Visual Basic Programming	2-3-3
NOS 120	Linux/UNIX Single User	2-2-3
WEB 140	Web Development Tools	2-2-3
CTS 135	Integrated Software Introduction	2-4-4

Web Development (15 SHC)

CSC 151	Java Programming	2-3-3
WEB 140	Web Development Tools	2-2-3
WEB 210	Web Design	2-2-3
WEB 285	Emerging Web Technologies	2-2-3
DME 115	Graphic Design Tools	2-2-3

Total Semester Credit Hours: 67

Semester Sequence for CIT Core Classes

1st Semester (16 SHC)

ENG 111	Expository Writing	3-0-3
ENG 111A	Expository Writing Lab	0-2-1
Gen. Ed.	Humanities or Social Science	3-0-3
CIS 110	Introduction to Computers	2-2-3
CTS115	Information Systems Business Concept	3-0-3
NOS 110	Operating System Concepts	2-3-3

2nd Semester (18 SHC)

MAT 140	Survey of Mathematics	3-0-3
DBA 110	Database Concepts	2-3-3
CIS 115	Introduction to Programming and Logic	2-3-3
NOS 130	Windows Single User	2-2-3
NET 110	Networking Concepts	2-2-3
CTS 120	Hardware/Software Support	2-3-3

3rd Semester (9 SHC)

Gen. Ed.	ENG114 or Humanities or Social Science	3-0-3
CTS 285	Systems Analysis and Design	3-0-3
NOS 230	Windows Administration I	2-2-3

Select Track

4th Semester (9 SHC)			
Gen. Ed.	ENG114 or Humanities or Social Science		3-0-3
CTS 289	System Support Project		1-4-3
SEC 110	Security Concepts		3-0-3
Select Track			

Semester Sequence for CIT Track Classes

Database Programming

3rd Semester (9 SHC)			
CSC 139	Visual Basic Programming		2-3-3
DBA 115	Database Applications		2-2-3
NOS 120	Linux/UNIX Single User		2-2-3

4th Semester (6 SHC)			
CSC 151	Java Programming		2-3-3
DBA 120	Database Programming I		2-2-3

Network Technologist

3rd Semester (9 SHC)			
NOS 120	Linux/UNIX Single User		2-2-3
CTS 220	Adv. Hard/Software Support		2-3-3
NET 111	Internetwk Arch and Design		2-2-3

4th Semester (6 SHC)			
NOS 231	Windows Administration II		2-2-3
CTS 286	Network Support		2-2-3

Software Specialist

3rd Semester (12 SHC)			
DBA 115	Database Applications		2-2-3
CSC 139	Visual Basic Programming		2-3-3
NOS 120	Linux/UNIX Single User		2-2-3
WEB 140	Web Development Tools		2-2-3

4th Semester (4 SHC)			
CTS 135	Integrated Software Introduction		2-4-4

Web Development

3rd Semester (9 SHC)			
WEB 140	Web Development Tools		2-2-3
WEB 210	Web Design		2-2-3
DME 115	Graphic Design Tools		2-2-3

4th Semester (6 SHC)			
WEB 285	Emerging Web Technologies		2-2-3
CSC 151	Java Programming		2-3-3

COURSE DESCRIPTIONS

CIS 110 Introduction to Computers 2-2-3

This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option). This course is also available through the Virtual Learning Community (VLC).*

CIS 115 Intro to Prog & Logic 2 3 3

Prerequisites: MAT 070, MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175

This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics (Quantitative Option). This course is also available through the Virtual Learning Community (VLC).*

CSC 139 Visual BASIC Prog 2-3-3

This course introduces computer programming using the Visual BASIC programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level. *This course is also available through the Virtual Learning Community (VLC).*

CSC 151 JAVA Programming 2-3-3

This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement*

CTS 115 Info Sys Business Concept 3-0-3

The course introduces the role of IT in managing business processes and the need for business process and IT alignment. Emphasis is placed on industry need for understanding business challenges and developing/managing information systems to contribute to the decision making process based on these challenges. Upon completion, students should be able to demonstrate knowledge of the 'hybrid business manager' and the potential offered by new technology and systems.

CTS 120 Hardware/Software Support 2-3-3

Prerequisites: CIS 110 or CIS 111

This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

CTS 135 Integrated Software Intro 2-4-4

Prerequisites: CIS 110 or CIS 111

This course instructs students in the Windows or Linux based program suites for word processing, spreadsheet, database, personal information manager, and presentation software. This course prepares students for introductory level skills in database, spreadsheet, personal information manager, word processing, and presentation applications to utilize data sharing. Upon completion,

students should be able to design and integrate data at an introductory level to produce documents using multiple technologies.

CTS 220 Adv Hard/Software Support 2-3-3
Prerequisites: CTS 120

This course provides advanced knowledge and competencies in hardware and operating system technologies for computer technicians to support personal computers. Emphasis is placed on: configuring and upgrading; diagnosis and troubleshooting; as well as preventive maintenance of hardware and system software. Upon completion, students should be able to install, configure, diagnose, perform preventive maintenance, and maintain basic networking on personal computers.

CTS 285 Systems Analysis & Design 3-0-3
Prerequisites: CIS 115

This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOM tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques.

CTS 286 Network Support 2-2-3
Prerequisites: NOS 230 or NOS 231

This course provides experience using CD ROM and on-line research tools and hands-on experience for advanced hardware support and troubleshooting. Emphasis is placed on troubleshooting network adapter cards and cabling, network storage devices, the DOS workstation, and network printing. Upon completion, students should be able to analyze, diagnose, research, and fix network hardware problems.

CTS 289 System Support Project 1-4-3
Prerequisites: CTS 285

This course provides an opportunity to complete a significant support project with minimal instructor assistance. Emphasis is placed on written and oral communication skills, project definition, documentation, installation, testing, presentation, and user training. Upon completion, students should be able to complete a project from the definition phase through implementation.

DBA 110 Database Concepts 2-3-3

This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms.

DBA 115 Database Applications 2-2-3
Prerequisites: DBA 110

This course applies concepts learned in DBA 110 to a specific DBMS. Topics include manipulating multiple tables, advanced queries, screens and reports, linking, and command files. Upon completion, students should be able to create multiple table systems that demonstrate updates, screens, and reports representative of industry requirements.

DBA 120 Database Programming I 2-2-3

This course is designed to develop SQL programming proficiency. Emphasis is placed on data definition, data manipulation, and data control statements as well as on report generation. Upon completion,

students should be able to write programs which create, update, and produce reports.

DME 115 Graphic Design Tools 2-2-3

This course provides students with an introduction to creative expression and art/design techniques in a digital environment. Emphasis is placed on designing, creating, editing and integrating visual components consisting of bit-mapped and vector-based images, drawings, banners, text, simple animations, and multiple layers. Upon completion, students should be able to design and produce a range of visual products using digital processing techniques.

ENG 111 Expository Writing 3-0-3

Prerequisites: 80 CPT reading score and 86 CPT writing score, or 18 ACT score, or 450 verbal SAT score, or satisfactory completion of developmental requirements.

Corequisites: ENG 111A

This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition.*

ENG 111A Expository Writing Lab 0-2-1

Prerequisites: 80 CPT reading and 86 CPT writing score, or 18 ACT score, or 450 verbal SAT score, or satisfactory completion of developmental requirements.

Corequisites: ENG 111

This writing laboratory is designed to apply the skills introduced in ENG 111. Emphasis is placed on the editing and revision components of the writing process. Upon completion, students should be able to apply those skills in the production of final drafts in ENG 111. *The computer is used as a writing and design tool for this course.*

ENG 114 Prof. Research & Reporting 3-0-3

Prerequisites: ENG 111

This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. The computer is used as a writing and design tool for this course. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition.*

HUM 115 Critical Thinking 3-0-3

Prerequisites: ENG 095 or RED 090 and ENG 090

This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course may meet the SACS humanities requirement for AAS degree programs.

MAT 140 Survey of Mathematics 3-0-3

Prerequisites: CPT arithmetic score of 57 and algebra score of 38, or ACT score of 18, or SAT mathematics score of 450, or successful completion of developmental requirements

This course provides an introduction in a non-technical setting to selected topics in mathematics. Topics may include, but are not limited to, sets, logic, probability, statistics, matrices, mathematical systems, geometry, topology, mathematics of finance, and modeling. Upon completion, students should be able to understand a variety of mathematical applications, think logically, and be able to work collaboratively and independently. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.*

NET 110 Networking Concepts 2-2-3

This course introduces students to the networking field. Topics include network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. *This course is also available through the Virtual Learning Community (VLC).*

NET 111 Internetwork Arch & Design 2-2-3

Prerequisites: CIS 282 or NET 110

This course introduces the physical and logical design of local area networks, wide area networks, and networking devices used in the design implementation and integration. Topics include LAN segmentation, VLANs, IP addressing, router, switch, and server placement with an emphasis on design. Upon completion, students should be able to understand fundamental LAN and WAN design and the physical and logical aspects needed to achieve the design goal.

NOS 110 Operating System Concepts 2-3-3

This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems.

NOS 120 Linux/UNIX Single User 2-2-3

Prerequisites: NOS 110

This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

NOS 130 Windows Single User 2-2-3

Prerequisites: NOS 110

This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

NOS 230 Windows Admin I 2-2-3

Prerequisites: NOS 130

This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment.

NOS 231 Windows Admin II 2-2-3

Prerequisites: NOS 230

This course covers implementing, managing, and maintaining a Windows Server network infrastructure. Topics include implementing, managing, and maintaining IP addressing, name resolution, network security, routing and remote access, and managing a network infrastructure. Upon completion, students should be able to manage and maintain a Windows Server environment

PSY 150 General Psychology 3-0-3

This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

SEC 110 Security Concepts 3-0-3

This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.

WEB 140 Web Development Tools 2-2-3

This course provides an introduction to web development software suites. Topics include the creation of web sites and applets using web development software. Upon completion, students should be able to create entire web sites and supporting applets.

WEB 210 Web Design 2-2-3

This course introduces intermediate to advanced web page design techniques. Topics include effective use of graphics, fonts, colors, navigation tools, advanced markup language elements, as well as a study of bad design techniques. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web pages.

WEB 285 Emerging Web Technologies 2-2-3

This course will explore, discuss, and research emerging technologies in the web arena. Emphasis is placed on exposure to up-and-coming technologies relating to the web, providing hands-on experience, and discussion of practical implications of these emerging fields. Upon completion, students should be able to articulate issues relating to these technologies.