

WEB AND PROGRAMMING

Associate of Applied Science Degree Option

The following advisement plan is a recommended course of study. An academic advisor may alter course sequence to meet individual student needs. In addition, an academic advisor may recommend additional or different courses depending upon student career plans and/or requirements of the college or university to which the student plans to transfer.

Freshman Year

First Semester	Credit Hours
SSP 1002 Smart Start Pathway	2
IST 1124 IT Foundations	4
IST 1134 Fundamentals of Data Communications	4
IST 1153 Web and Programming Concepts	3
IST 1314 Visual Basic Programming Language	4
Total Hours	17

Second Semester	Credit Hours
IST 1143 Principles of Information Security	3
IST 1163 Concepts of Database Design	3
IST 2483 Web Server	3
IST 1423 Web Design Applications	3
IST 2453 Mobile Application Development or CSC 1613	3
ENG 1113 English Composition I	3
Total Hours	18

Sophomore Year

First Semester	Credit Hours
IST 2373 C Programming Language or CSC 2134	3 or 4
IST 2433 Server-Side Programming I	3
IST 1413 Client-Side Programming	3
ENG 1123 English Composition II	3
Academic Elective	3
Total Hours	15 or 16

Second Semester	Credit Hours
IST 2313 Systems Analysis and Design	3
IST 2473 E-Commerce Strategies	3
SPT 1113 Public Speaking	3
MAT 1313 College Algebra	3
Approved Academic/CTE Elective*	3
Total Hours	15

*Another programming language elective may be chosen if approved by IST instructors:
IST 1513 SQL Programming, IST 1713 Java Programming, **IST 1723 Programming in Python**, IST 2324 Script Programming, IST 2334 Advance Visual Basic, IST 2344 Database Programming, IST 2373 C Programming, IST 2383 Advanced C Programming, IST 2424 XML Programming, IST 2433 Server Side Programming I, IST 2443 Server Side programming II, CSC 1213 Visual Basic Programming

INFORMATION SYSTEMS TECHNOLOGY

- IST 1113** – Fundamentals of Information Technology – This course introduces microcomputer operation, word processing, spreadsheets, database management, and online applications. It is designed for students with limited computer proficiency and is to be taken by those students in addition to the courses listed in the course sequence. Three semester credit hours: two hours lecture and two hours lab.
- IST 1124** – IT Foundations – This course covers the diagnosis, troubleshooting, and maintenance of computer components, installs and uses several operating systems, and discusses interpersonal communications for IT professionals. Topics include hardware compatibility, system architecture, memory, input devices, video displays, disk drives, modems, printers, safety and environmental issues, operating systems, communication, and professional behavior. Four semester credit hours: two hours lecture and four hours lab.
- IST 1134** – Fundamentals of Data Communications – This course introduces students to fundamentals of networking. It provides coverage of architectures, topologies, and protocols. Four semester credit hours: two hours lecture and four hours lab.
- IST 1143** – Principles of Information Security – This course is an introduction to the various technical and administrative aspects of Information Security and Assurance. This course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system with appropriate intrusion detection and reporting features. Three semester credit hours: two hours lecture and two hours lab.
- IST 1153** – Web and Programming Concepts – This course is an introduction to programming logic, computer systems, and the Internet. Students will gain hands-on experience in the development of computer programs and web pages. Three semester credit hours: two hours lecture and two hours lab.
- IST 1163** – Concepts of Database Design – This course is an introduction to the design and manipulation of relational databases. Emphasis is placed on creation, manipulation, extraction, and display of data from existing databases. SQL is introduced and explored. Three semester credit hours: two hours lecture and two hours lab.
- IST 1213** – Client Installation and Configuration – This course is designed to help the student install, support and troubleshoot a current client operating system. Emphasis will be placed on common user operations as well as the network administrator's support of the client. Three semester credit hours: two hours lecture and two hours lab.
- IST 1223** – Network Components – Prerequisite: Fundamentals of Data Communications (IST 1134). This course presents local area network and wide area network connectivity. It focuses on architectures, topologies, protocols, and transport methods of a network. Three semester credit hours: two hours lecture and two hours lab.
- IST 1244** – Network Administration Using Microsoft Windows Server – Prerequisite: IT Foundations (IST 1124) or permission of instructor. This course focuses on the management of a computer network using the Microsoft Windows Server network operating system. Emphasis will be placed on daily administrative tasks performed by a network administrator. Four semester credit hours: two hours lecture and four hours lab.
- IST 1254** – Network Administration Using Linux – Prerequisite: IT Foundations (IST 1124) or permission of instructor. This course focuses on the management of a computer network using the Linux operating system. Emphasis is placed on installation, configuration, implementation, and administrative tasks of a functional server. Four semester credit hours: two hours lecture and four hours lab.
- IST 1314** – Visual BASIC Programming Language – Introduction to the Visual BASIC programming language introduces the student to object-oriented programming and a graphical integrated development environment. Four semester credit hours: two hours lecture and four hours lab.
- IST 1413** – Client Side Programming – Prerequisites: Web and Programming Concepts (IST 1153) and a Programming Language. This course focuses on JavaScript, CSS, and DHTML programming. Three semester credit hours: two hours lecture and two hours lab.
- IST 1423** – Web Design Applications – Prerequisite: Web and Programming Concepts (IST 1153) or permission of instructor. Application of various professional and personal web design techniques are utilized. Students will work with the latest WYSIWYG editors, HTML editors, animation/multimedia products, and photo editors. Three semester credit hours: two hours lecture and two hours lab.
- IST 1483** – Fundamentals of Virtualization – This course presents basic concepts of operating system virtualization, server virtualization, cloning, teams, and virtual networks. Three semester credit hours: two hours lecture and two hours lab.
- IST 1513** – SQL Programming – The Course is the first of a two-part series that offers students an extensive introduction to data server technology, covering the concepts of both relational and object relational databases and the structured query language (SQL). Students are taught to retrieve data and produce readable output. Three semester credit hours: two hours lecture and two hours lab.
- IST 1613** – Computer Forensics – This course is an introduction to the various technical and administrative aspects of computer forensics and laws pertaining to cybercrime. This course provides the foundation for understanding the key issues associated with computer forensic investigations, understanding the boot processes and disk structure for multiple operating systems, and understanding the processes related to data acquisition during investigations. Three semester credit hours: two hours lecture and two hours lab.
- IST 1713** – Java Programming Language – This introduction to the Java programming language is to include sort, loops, arrays, and applets. Three semester credit hours: two hours lecture and two hours lab.
- IST 1723** – Programming in Python – This course is designed to provide an introduction to programming concepts and data informatics using Python through lecture and a series of practical hands-on exercises. Three semester credit hours: two hours lecture and two hours lab.
- IST 2213** – Network Security – Prerequisites: Network Components (IST 1223). This course provides an introduction to network and computer security. Topics such as ethics, security policies, legal issues, vulnerability testing tools, firewalls and operating system hardening will be discussed. Students will receive a deeper understanding of network operations and protocols through traffic capture and protocol analysis. Three semester credit hours: two hours lecture and two hours lab.
- IST 2224** – Network Planning and Design – Prerequisite: A Network Operating System Elective and Network Components (IST 1223). This course involves applying network concepts in planning and designing a functioning network. Emphasis is placed on recognizing the need for a network, conducting analysis, and designing solutions. Four semester credit hours: two hours lecture and four hours lab.
- IST 2234** – Network Implementation – Prerequisite: Network Planning and Design (IST 2224). This course is the culmination of all concepts learned in the network curriculum. Topics include planning, installation, evaluation, and maintenance of a network solution. Four semester credit hours: two hours lecture and four hours lab.
- IST 2253** – Advanced Network Administration Using Microsoft Windows Server – Prerequisites: IT Foundations (IST 1124) and Network Administration using Microsoft Windows Server (IST 1244). This course is a continuation of Network Administration Using Microsoft Windows Server. Emphasis is placed on installation, configuration, and implementation of a functional server. Three semester credit hours: two hours lecture and two hours lab.
- IST 2264** – Advanced Network Administration Using Linux – Prerequisites: Network Components (IST 1223), and Network Administration

- Using Linux (IST 1254). This course is a continuation of IST 1254 Network Administration Using Linux. This is an advanced administration course in network services for Linux users who wish to increase their skills. Students will learn how to apply security to network users and resources, manage and compile the Linux kernel, manage network clients, and troubleshoot network processes and services. Four semester credit hours: two hours lecture and four hours lab.
- IST 2313** – Systems Analysis and Design – Prerequisites: Concepts of Database Design (IST 1163) and Web Server (IST 2483) or by permission of instructor. This course introduces techniques used in systems analysis, design, maintenance, security, and evaluation. Emphasis will be placed on the design and development of web based systems. Three semester credit hours: two hours lecture and two hours lab.
- IST 2324** – Script Programming Language – Prerequisites: Web and Programming Concepts (IST 1153) or by permission of instructor. This course is an introduction to the use of integrating scripts to add functionality to web pages. Four semester credit hours: two hours lecture and four hours lab.
- IST 2334** – Advanced Visual BASIC Programming Language – Prerequisite: Visual BASIC (IST 1314). This course is a continuation of Visual BASIC. Emphasis is placed on database access, file access, controls, and structures. Four semester credit hours: two hours lecture and four hours lab.
- IST 2344** – Database Programming and Design – This course will introduce programming using a database management software application. Emphasis will be placed on menus and file maintenance. Four semester credit hours: two hours lecture and four hours lab.
- IST 2373** – C Programming Language – Prerequisites: Any Programming Language course or by permission of instructor. This course is designed to introduce the student to the C programming language and its basic functions. Three semester credit hours: two hours lecture and two hours lab.
- IST 2383** – Advanced C Programming Language – Prerequisite: C Programming Language (IST 2373). This course is a continuation of the C programming language. Three semester credit hours: two hours lecture and two hours lab.
- IST 2424** – XML Programming – Prerequisite: Web and Programming Concepts (IST 1153). This course provides a comprehensive understanding of the Extensible Markup Language (XML). Four semester credit hours: two hours lecture and four hours lab.
- IST 2433** – Server-side Programming I – Prerequisite: Client Side Programming (IST 1413). This course is an introduction to creating dynamic web applications using server-side technologies. Three semester credit hours: two hours lecture and two hours lab.
- IST 2443** – Server-side Programming II – Prerequisite: Server Side Programming I (IST 2433). This course is a continuation of Server Side Programming I with increased emphasis on data driven content. Three semester credit hours: two hours lecture and two hours lab.
- IST 2453** – Mobile Application Development – Prerequisite: Visual BASIC Programming (IST 1314). This course introduces application development using mobile device techniques and platforms. Three semester credit hours: two hours lecture and two hours lab.
- IST 2473** – E-commerce Strategies – Prerequisite: Server Side Programming I (IST 2433) or permission of instructor. Provides opportunities for students to examine strategies and products available for building electronic commerce sites, examine how such sites are managed, and explore how they can complement an existing business infrastructure. Students get hand-on experience implementing the technology to engage cardholders, merchants, issues, payment getaways, and other parties in electronic transactions. Three semester credit hours: two hours lecture and two hours lab.
- IST 2483** – Web Server – Prerequisite: IT Foundations (IST 1124). Co-requisite: Server Side Programming I (IST 2433). Introduces students to web, email, and proxy servers and the platforms on which they reside. Students will be able to install and configure web, email, and proxy servers. Three semester credit hours: two hours lecture and two hours lab.