

## Forrest College Catalog Supplement

### Information Technology (IT) Programs

#### Associate in Applied Science Degree in Information Technology (AAS/IT)

Students in this program of study experience career-focused courses and hands-on learning experiences using industry-current equipment and software. The program is intended to prepare students for entry-level positions within the field of Information Technology (IT). Students in this two year (22 months) program of study explore a wide range of experiences including, among other things, PC troubleshooting, applications, operating systems, network configurations, hardware maintenance and computer security. Industry standard certifications are strongly emphasized and encouraged throughout the duration of the program. The program emphasizes entrepreneurship and exploring the various possibilities for contracting one's services to a myriad of enterprises, local, national and international, providing graduates with extensive possibilities of employment. Upon graduation the student is awarded the Associate in Applied Science Degree in Information Technology.

Laptop Requirement: Students entering this program must have at a minimum a laptop that meets minimally required software and other specifications needed to participate in this program of study. Students may purchase their own computers or purchase a computer from the college bookstore.

College Equipment: Students have the opportunity to use the following school equipment as required throughout the program: computer systems, network hubs, patch panels, printers and other common computer peripherals. Wi-Fi access is available throughout the campus.

<u>Area I:</u>	<u>Core Component</u>	<u>Credit Hours</u>
BUS116	Personal Finance	1.5
CIS101	Introduction to Computer Information Systems and Internet Basics	4.5
CIS105	Introduction to Information Technology	4.5
CIS131	Virtual Office Communications and Applications	4.5
*ENG120	English Composition I	4.5
SCI120	Principles of College Mathematics, or approved SCI elective	4.5
	<b>Component Total</b>	<b>24.0</b>
<u>Area II:</u>	<u>Major Component</u>	<u>Credit Hours</u>
*BUS130	Principles of Management	4.5
*BUS 245	Entrepreneurship & Small Business Management	4.5
*CIS106	Introduction to Programming	4.5
*CIS111	Computer Operating Systems	4.5
*CIS151	Introduction to Networking	4.5
*CIS225	Data Management Concepts and Applications	4.5
*CIS285	Internship, or Approved elective	4.5
*CRT106	Computer Repair – Hardware II, or *CIS115 – Foundations of Information Technology	4.5
*CRT116	Computer Repair –Software Concepts II, or *CIS120 - Applications in Information Technology	4.5
	<b>Component Total</b>	<b>40.5</b>

<b><u>Area III: General Education Component</u></b>	<b><u>Credit Hours</u></b>
*ENG125 Professional Communications	4.5
*ENG200 English Composition II	4.5
SCI210 Introduction to Research and Statistics	4.5
SOC110 Ethics	4.5
SOC125 Principles of Psychology	4.5
<b>Component Total</b>	<b><u>22.5</u></b>
<b><u>Area IV: Elective Component</u></b>	<b><u>13.5</u></b>
*CISELE <i>Information Technology Electives (3 courses)</i>	
<b><u>Minimum Total Credit Hours Required For Graduation</u></b>	<b><u>100.5</u></b>

### Areas of Emphasis

Students may elect to take any or all of the following Emphases. If the student decides to do so, three courses within the selected area of emphasis can be substituted for the Area 4, Elective Component.

Each of these Emphasis is designed to cover competencies needed to pass one or more industry-standard certifications. The College strongly encourages you to seek certification. When you choose to certify is a personal decision. Your instructors are prepared and available to advise you in this regard but our experience is that some students can pass their examination right after the completion of their coursework and others need work experience to gain the confidence and additional knowledge necessary to pass the examination.

#### **Emphasis in IT Support**

Computer user support specialists provide help and advice to people and organizations using computer software or equipment. This emphasis focuses on computer users as well as specialists who assist non-IT users who are having computer problems.

<u>Code</u>	<u>Course</u>	<u>Credit Hours</u>
CIS231	Help Desk / Remote Support I	4.5
CIS232	Help Desk / Remote Support II	4.5
CIS280	Directed Studies	4.5

#### **Emphasis in Networking**

Computer network support specialists provide help and advice to people and organizations using computer software and equipment. This emphasis focuses on the support of information technology (IT) employees within their organization. Others, called "computer user support specialists," assist non-IT users who are experiencing computer problems.

<u>Code</u>	<u>Course</u>	<u>Credit Hours</u>
CIS251	Network Foundations and Applications I	4.5
CIS252	Network Foundations and Applications II	4.5
CIS280	Directed Studies	4.5

### **Emphasis in Security**

Computer Security, also known as cybersecurity or IT security, is an emerging specialty. This emphasis introduces the student to the concepts, methods and means of protection of information systems from theft or damage to the hardware, the software, and to the information contained within. Emphasis is given as to the avoidance of disruption or misdirection of the services provided. Instruction includes controlling physical access to hardware as well as protecting against harm that may come via network access, data and code injection and factors due to malpractice by operators, whether intentional or accidental, or due to being deceived into deviating from established procedures

<u>Code</u>	<u>Course</u>	<u>Credit Hours</u>
CIS241	Security Foundations	4.5
CIS242	Security Applications	4.5
CIS280	Directed Studies	4.5

### **Emphasis in Ethical Hacking and Computer Forensic Investigations**

This series of three courses in ethical hacking and computer hacker forensics investigation is meant to enhance the knowledge and technical abilities of individuals already employed as practitioners in the field as security officers, auditors, security professionals, and site administrators. The emphasis is also intended for non-practitioners, individuals concerned about the integrity of network infrastructure relative to security issues. Students completing this emphasis are encouraged to seek certification as a Certified Ethical Hacker (CEH) and/or Computer Hacking Forensic Investigator (CHFI) through the EC-Council.

<u>Code</u>	<u>Course</u>	<u>Credit Hours</u>
CIS 290	Computer Hacking Forensic Investigation	4.5
CIS 295	Ethical Hacking I	4.5
CIS 296	Ethical Hacking II	4.5

#### **Notice to Students Regarding Certification:**

Although graduates of this program are not subject to licensure or certification, the College stresses certification in all of its programs where certification by a certifying agency accredited by NCAA is available. Certifications appropriate to this program are offered through CompTIA and E-Council. The College is an approved test site for the CompTIA examinations.

Courses are designed using recommended instructional materials from these certifying organizations. Training materials selected and purchased from U-Certify are used for preparing students for certification in specific IT areas.

The College encourages those students it determines to be ready, to certify to test for certification as soon as possible.

## COURSE DESCRIPTIONS

### **BUS 116 Personal Finance**

**1.5 Credit Hours**

Financial planning covers a wide variety of money topics including budgeting, expenses, debt, and repayment of debt, savings, the need for financial planning and the importance of having insurance among others things. Students will have a better understanding of how each of these topics works together and affects each other as well as how important financial planning is for laying the groundwork for a solid financial foundation for oneself and one's family. The importance of honoring one's incurred financial obligations is heavily stressed.

### **BUS 130 Principles of Management**

**4.5 Credit Hours**

Covers current management practices commonly found in small businesses. Emphasis is on aspects of the planning process, such as organizing for action, concepts of control, the communication system, and motivating employees.

Prerequisite: BUS 105 or Permission of Instructor

### **BUS 245 Entrepreneurship & Small Business Management**

**4.5 Credit Hours**

Examines the various aspects of starting, acquiring, and managing a small business enterprise. This course involves students in comprehensive discussions regarding problems generally encountered by small businesses. A study of management principles and procedures provides methods for resolving these problems.

Prerequisite: BUS 130 or Permission of Instructor

### **CIS 101 Intro to Computer Information Systems & Internet Basics**

**4.5 Credit Hours**

This course provides a basic knowledge of computer operating systems, software and hardware. It introduces the student to Word processing, Spreadsheets, the Intranet, and Graphic software. Included is a hands-on introduction to Microsoft Windows commands, files, features and functions. Utilizing the College's on-line library, Library & Information Resources Network (LIRN), the course combines the learning of real-world skills for navigating the Internet, with a survey of the major uses of, and issues related to, the Internet.

### **CIS 105 Introduction to Information Technology**

**4.5 Credit Hours**

This course introduces students to information technology as a discipline and the various roles and functions of the IT department as a business support component. Students are presented with various IT disciplines including systems and services, network and security, scripting and programming, data management, and the business of IT. Students are exposed to surveys of technologies, history, and terminology associated with the field, their interrelationships, and their applications to particular business settings.

Prerequisite: Permission of Instructor

### **CIS 106 Introduction to Programming**

**4.5 Credit Hours**

This course introduces the student to a spectrum of skills including implementation and maintenance of hypertext-based Web sites using authoring and scripting languages, creating of web content, use of web management tools and digital media tools, and the application of human-factor principles to design. Upon completion, the student will be able to demonstrate an understanding of custom Web programming language objects, decision structures, Web programming languages, functions, methods, properties, and the ability to create, modify, and utilize variables and data.

Prerequisite: CIS 101 or Permission of Instructor

**CIS 111 Computer Operating Systems****4.5 Credit Hours**

Covers functional characteristics of computer systems. Discusses basic operating system concepts, command languages, internal operating systems and resource-management strategies used in contemporary operating systems.

Prerequisite: CIS 101 or Permission of Instructor

**CIS 115 Foundations of Information Technology****4.5 Credit Hours**

Foundations of Information Technology helps students gain an understanding of personal computer components, their function in desktop systems, and computer data storage and retrieval. This course covers classifying, installing, configuring, optimizing, upgrading, and troubleshooting printers, laptops, portable devices, operating systems, networks, and system security. Students are prepared to recommend appropriate tools, diagnostic procedures, preventative maintenance and troubleshooting techniques for personal computer components in a desktop system. Strategies for identifying, preventing, and reporting safety hazards and environmental/human accidents in a technological environments, effective communication with colleagues and clients as well as job-related professional behavior are addressed.

Prerequisite: CIS 105 or Permission of Instructor

**CIS 120 Applications in Information Technology****4.5 Credit Hours**

IT Applications is a continuation of CIS 115. This applications course further explores mobile devices and support for various platforms using simulations and hands-on laboratory experiences intended to prepare the student to repair both hardware and software

Prerequisite: CIS115 or Permission of Instructor

**CIS 131 Virtual Office Communications & Applications****4.5 Credit Hours**

This course explores ways and means by which productivity can and should be a shared experience, integrating our more social aspects into everything that's typically done in the workplace, including but not limited to video conferencing, sharing spreadsheets, notes, ideas, collaboration on projects, etc. The course explores ways in which co-workers are virtually "gathered" and brought together in efforts directed at improving the very nature of work assignments and endeavors. This course is built around the concept that there's an evolution that's inevitable that's transitioning from an individual user's application into a shared workplace.

**CIS 151 Introduction to Networking****4.5 Credit Hours**

This course explores a variety of computer network possibilities. Some of the areas covered in the course include global systems integration, network system designs and implementation of network systems. Covers basic design considerations for LANS/WANS, protocols, performance issues, security, and popular commercial communication packages.

Prerequisite: CIS 101 or Permission of Instructor

**CIS 225 Data Management Concepts and Applications****4.5 Credit Hours**

This course provides a broad understanding of the technical concepts that are required by employers and educators? in the database industry. Students are exposed to Relational Database Management Systems (RDMS), designing and implementing a basic relational databases (subject/verb agreement), and exploring the Structured Query Language (SQL) used to create, manipulate and operate a relational database. Storage technologies, strategies to normalize data, and the languages and commands used to define, retrieve, and manipulate data are discussed.

Prerequisites: CIS 101, CIS131, CIS105, and or Permission of Instructor

**CIS 231 Help Desk / Remote Support I****4.5 Credit Hours**

This course introduces the student to means of providing support within an organization either directly or virtually using various remote support services. Troubleshooting, ticketing, customer service, soft skills, and follow-up are discussed in detail. Windows Remote Desktop, VMWare, and other applications will be used to expose the student to troubleshooting techniques and methods for providing remote support services.

Prerequisites: CIS 111, CIS 120, and CIS 151, or Permission of Instructor

**CIS232 Help Desk / Remote Support II****4.5 Credit Hours**

This course builds on the concepts introduced in CIS 231, Help Desk/Remote Services. Students explore advanced level support processes including but not limited to methods to improve service desk response time, escalate services, maintain proper customer documentation, remote monitoring, and account management.

Prerequisites: CIS 231, or permission of instructor:

**CIS 241 Security Foundations****4.5 Credit Hours**

This course introduces students to the components of a computer network and the concept and role of communication protocols. The course covers widely used categorical classifications of networks (CAN, LAN, MAN, WAN) as well as network topologies, physical devices, and layered abstraction. Students are introduced to basic concepts of security, covering vulnerabilities of networks and mitigation techniques, security of physical media, and security policies and procedures.

Prerequisite: CIS 151 or Permission of Instructor

**CIS 242 Security Applications****4.5 Credit Hours**

Students are introduced to basic concepts of security and security threats. Students taking this course demonstrate the ability to recommend appropriate security procedures, explain and make recommendations for appropriate security strategies and procedures for organizational operations, recommend appropriate methods for controlling accessing data and information and authenticating users and groups in gaining that access. Students are able to evaluate risks associated with network security, recommend monitoring strategies and methods, identify and explain the role of encryption in network security, and identify security needs and make appropriate recommendations as to security practices for network infrastructures.

Prerequisite: CIS 241 or Permission of Instructor

**CIS 251 Network Foundations and Applications I****4.5 Credit Hours**

This course focuses on wiring standards, as well as differentiating, installing, and configuring network devices. Network troubleshooting, maintenance, topologies, models, protocols, ports, addressing schemes, routing, and wireless communication standards are covered. Concepts of Security needs are addressed.

Prerequisite: CIS 151 or Permission of Instructor

**CIS 252 Network Foundations and Applications II****4.5 Credit Hours)**

This course is a continuation of CIS 251. Students are engaged in advanced discussions on the OSI model and Network Operating systems as well as an introduction to Active Directory creation, management and security

Prerequisite: CIS 251 or Permission of Instructor

**CIS280 Directed Studies****4.5 Credit Hours**

Directed Studies is intended to provide the student with the opportunity to work closely with his instructor to explore, in depth, areas of particular interest within his/her program of study.

Prerequisite: Permission of Instructor

**CIS 285 Internship****4.5 Credit Hours**

Includes on-the-job training in areas appropriate to the chosen course of study. Enables students to work closely with their instructors to develop term projects related to work experiences.

Prerequisite: Permission of Instructor

**CIS 290 Computer Hacking Forensic Investigation****4.5 Credit Hours**

This course presents a detailed methodological approach to computer forensics and evidence analysis. The course covers major forensic investigation scenarios that enable students to acquire hands-on experience on various forensic investigation techniques and standard tools necessary to successfully carry-out a computer forensic investigation.

Prerequisite: CIS 151 or Permission of Instructor

**CIS 295 Ethical Hacking I****4.5 Credit Hours**

This course covers ethical hacking and information systems security auditing programs focusing on the latest security threats, advanced attack vectors and practical real-time demonstration of latest hacking techniques, methodologies, tools, tricks and security measures.

Prerequisite: CIS 151 or Permission of Instructor

**CIS 296 Ethical Hacking II****4.5 Credit Hours**

A continuation of CIS295, Ethical Hacking I, this course looks at ethical hacking and information systems security auditing programs, focusing in greater detail on the latest security threats, advanced attack vectors and practical real-time demonstration of the more advanced hacking techniques, methodologies, tools, tricks and security measures.

Prerequisite: CIS 295 or Permission of Instructor

**CIS299 Project Management****4.5 Credit Hours**

This course introduces the student to project management & business analysis processes. Fundamental concepts of project management are covered, including all phases of project management during a system life cycle including business analysis, requirements capturing, issue tracking, and release planning. Additional topics include: development environments (dev, integration, QA, production), help desk and support, IT planning for business continuity. The course prepares students for the following certification exam: CompTIA Project+. This course covers the following competencies:

- Implementing, controlling, and coordinating projects according to project plans.
- Creating a project plan.
- Explaining the strategies and processes of project closure, acceptance, and delivery.

Prerequisite: Permission of Instructor

**CRT 106 Computer Repair – Hardware II****4.5 Quarter Hours**

Continues the study of computer hardware and installation through a highly visual, hands-on exploration of the computer. Provides the student with knowledge of peripheral devices such as expansion cards, I/O devices, etc. Introduces multimedia technology. Explores basic electricity and the relationship between voltage and current. Provides introduction to modems, ISDN, cable and DSL lines.

Prerequisite: CIS105, or permission of instructor

**CRT 116 Computer Repair – Software Concepts II****4.5 Quarter Hours**

Continues the exploration of software concepts. Explores troubleshooting, virus recovery and prevention, and disaster recovery. Provides an understanding of the uses of disk maintenance. Teaches the concepts needed to make management decisions towards the purchase of PCs. Explores networking fundamentals and how the network can interact with the Internet.

Prerequisite: CRT 106, or permission of instructor

**ENG 120 English Composition I****4.5 Credit Hours**

This course emphasizes accuracy, clarity unity, coherence, and organization in written expression and organization. Students are required to write personal, descriptive, expository, and persuasive compositions. Topics stem from class discussions, current events, and literature selections.

**ENG 125 Professional Communications****4.5 Credit Hours**

Teaches students the art of communicating ideas orally. Organization of material, logical thought, and production of original and effective presentations are stressed; poise and confidence are developed through group discussions and personal delivery.

**ENG 200 English Composition II****4.5 Credit Hours**

This course is designed to help students increase competency in writing skills. Students study various methods of responding to literature in writing, and are required to respond to literary selections on personal and analytical levels. The course exposes the student to research and informational skills which culminate with the written presentation of a research paper. Library use is an integral part of this course.

Prerequisite: ENG 120 or Permission of Instructor

**SCI 120 Principles of College Mathematics****4.5 Credit Hours**

Students develop a thorough understanding of the concepts essential to mathematics. Students briefly review Whole Numbers, Fractions and Mixed Numbers, Decimals, Ratio and Proportion, and Percent. Students will proceed to explore Descriptive Statistics, Measurement, Geometry, Algebra and Solving Equations. The intellectual challenge of analysis is emphasized.

**SCI 210 Introduction to Research and Statistics****4.5 Credit Hours**

Focuses on giving students an understanding of the research process. Both measures of central tendency and measures of variability are incorporated in course exercises. Emphasis is placed on recognizing quality research through correct sampling and generalization procedures.

Prerequisite: SCI 120 or Permission of Instructor

**SOC 110 Ethics****4.5 Credit Hours**

Discusses and studies moral principles of conduct related to problems and reasoning. Emphasis is placed on developing the student's ability to engage in ethically sound decision-making. Moral theories, issues across the professions, and issues to specific professions are discussed. As a part of this course, individual students explore ethical issues related more specifically to their chosen professions.

**SOC 125 Principles of Psychology****4.5 Credit Hours**

Introduces the basic theories and concepts in the science of human behavior. This course presents the various ways the individual constructs his self-awareness. Studies how social institutions, such as the family and religion, influence the psychological make-up of the individual.

**Forrest College**  
**Associate in Science Degree in Information Technology**  
**Program Outline by Term (Quarters)**

<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
1	CIS131	Virtual Office Communications and Applications	4.5
1	SCI120	Principles of College Mathematics	4.5
1	CIS101	Introduction to Computer Information Systems & Internet Basics	4.5
			<b>13.5</b>
<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
2	BUS116	Personal Finance	1.5
2	ENG120	English Composition I	4.5
2	SCI210	Introduction to Research and Statistics	4.5
2	CIS105	Introduction to Information Technology	4.5
			<b>15.0</b>
<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
3	CIS151	Introduction to Networking	4.5
3	CIS111	Computer Operating Systems	4.5
3	BUS130	Principles of Management	4.5
			<b>13.5</b>
<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
4	CIS115	Foundations of Information Technology	4.5
4	ENG125	Professional Communications	4.5
4	SOC125	Principles of Psychology	4.5
			<b>13.5</b>
<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
5	CIS106	Introduction to Programming	4.5
5	CIS120	Applications in Information Technology	4.5
5	SOC110	Ethics	4.5
			<b>13.5</b>
<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
6	ENG200	English Composition II	4.5
6	CIS231 or CIS251 or CIS241 or CIS295	Help Desk / Remote Support I Network Foundations Security Foundations Certified Ethical Hacker I	4.5
6	CIS225	Data Management Concepts and Applications	4.5
			<b>13.5</b>
<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
7	CIS232 or CIS252 or CIS242 or CIS296	Help Desk / Remote Support II Network Applications Security Applications Certified Ethical Hacker II	4.5
7	BUS245	Entrepreneurship and Small Business Management	4.5
			<b>9</b>
<b>Term</b>	<b>Class Code</b>	<b>Course Name</b>	<b>Hours</b>
8	CIS280	Directed Studies	4.5
8	CIS285	Internship	4.5
			<b>9</b>