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# **Program Review**

## **Institutional Self-Study Computer Information Technology Program**



**Southern Arkansas University Tech**

**2012-2013**

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## Overview

The Arkansas Higher Education Coordinating Board (AHECB) Existing Program Review Policy adopted in October 2008 requires the review of all academic programs every seven to ten years. A major component of the policy is an internal review (self-study) by institutions and an external review by consultants of programs. The institution's self-study, consultants' written evaluation, and the institution's response to the consultants' findings will be submitted to the Arkansas Department of Higher Education.

This self-study is a program review of the following academic program:

Associate of Applied Science Degree in Computer Information Technology

\*Computer Technician Emphasis

\*Network & System Administrator Emphasis

Technical Certificate in Computer Information Technology

Certificate of Proficiency in Computer Engineering

Certificate of Proficiency in Cisco Networking

Certificate of Proficiency in A+ Certification

Certificate of Proficiency in Microsoft Certified IT Professional.

## I. Goals, Objectives and Activities

### **1. Describe specific educational goals, objectives and activities of the program.**

With the importance of computers in the workplace and the emphasis on more sophisticated technologies, qualified computer technology people are in high demand. Southern Arkansas University Tech's (SAU Tech) computer information technology program provides students with the opportunity to develop the skills needed to obtain a job in computer technology. Students learn how to install, configure, and maintain personal computer workstations, as well as setting up clients and servers on a network. The program gives students a foundation for pursuing A+, Network+, Security+, Systems Security Certified Practitioner (SSCP), Microsoft Certified IT Professional (MCITP), and Cisco Certified Network Associate (CCNA) certifications that can offer students greater employment potential. Graduates should be prepared for entry-level employment in a variety of positions. Students choose an area of emphasis between computer technician and network and system administration.

### **2. Explain how the program serves the general education program and other disciplinary programs on the campus, if applicable.**

The computer Information technology program provides the required computer science general education course (introduction to computers) for most transfer and career and technical education program degrees.

**3. Document market demand and/or state/industry need for careers stemming from the program.**

The base compensation for information technology (IT) professionals is expected to increase an average of 5.3 percent this year (2013). The 15 positions expected to see the largest salary gains, percentage-wise, are:

1. Mobile Applications developers
2. Wireless network engineer
3. Network engineer
4. Data modeler
5. Portal administrator
6. Data warehouse manager
7. Business intelligence analyst
8. Senior web developer
9. Web developer
10. Network architect
11. Network manager
12. Data architect
13. Data security analyst
14. Software engineer
15. Network administrator Net increase of 6.8 percent (\$62,750-\$93,250)

Networking is predicted to be the second fastest growing occupation in the United States, faster than the average for all occupations, and should continue to grow as we invest in newer, faster technology and mobile networks. Chief information officers have indicated the need for the following industry-based employees:

Network Administration	64%
Database Management	51%
Desktop Support	46%
Windows Administration	42%
Wireless Network Management	35%
Web Development and Design	35%
Telecommunications Support	28%
Virtualization	25%
Business Intelligence	22%
ERP Implementation	15%

The United States Bureau of Labor Statistics predicts the current fastest growing IT jobs to be:

Network and Computer Systems Administrators	28%
Information Security Analysts, Web Developers, and Computer Network Architects	22%
Computer Systems Analysts	22%
Computer and Information Research Scientists	19%

***Just in the United States alone, 234,700 new positions are predicted to be added by 2018.***

Sources:

Cisco VNI Forecast Highlights  
United States Bureau of Labor Statistics  
Robert Half Technology, 2012 Salary Guide  
Global Knowledge: 15 Top Paying IT Certifications for 2012  
Global Knowledge: 2012 IT Skills and Salary Report  
CareerBuilder study, commissioned by Cisco, 2011  
Network World; by Ann Bednarz; November 7, 2012; <http://www.networkworld.com/news/2012/110712-it-salaries-2013-264063.html>

**4. Document student demand for the program.**

Student program demand has remained steady over the last four academic years:

<i>Academic Year</i>	<i>Declared Majors</i>
2009-2010	68
2010-2011	71
2011-2012	61
2012-2013	58

SAU Tech recruiters report that student interest and demand for the computer information technology program among high school students in the college’s service area remains in the top three programs of the college.

**II. Curriculum**

**1. Describe how program content parallels current thinking/trends in the field/trade (best practices, advisory committee recommendations, etc.).**

Courses taught in the program directly map toward current industry-standard certification(s) and are integrated into the framework of the program curriculum. After taking assigned courses students should have sufficient skills and knowledge to pass one or more corresponding industry standardized exam(s) that will earn them certification in addition to their AAS degree.

CompTIA certifications validate the latest skills needed by today’s computer support professionals. It is an international, vendor-neutral certification recognized by major hardware and software vendors, distributors and resellers. CompTIA certifications confirm a technician's ability to perform tasks such as installation, configuration, diagnosing, preventive maintenance and basic networking, recognizes a technician's ability to describe the features and functions of networking components and to install, configure and troubleshoot basic networking hardware, protocols and services, and validates knowledge of communication security, infrastructure security, cryptography, operational security, and general security concepts. Certifications available for students include:

- CompTIA [A+ Certification](#)
- Courses Provided by Program EE2804, EE2904, CS2084 & CS2094
- CompTIA [Network+ Certification](#)
- Course provided by Program: NT2444

- CompTIA [Security+ Certification](#)
- Course Provided by Program: NT2204

Microsoft Certifications not only thrive on the continuing challenges of the IT field, but they also develop and hone necessary skills for continued employment. The practical expertise that is gained through the certification process provides individuals with the kind of know how that is recognized on the job, among peers, and employers. Certifications for students include:

- Microsoft Certified IT Professional [MCITP](#)
- Courses provided by program: NT1014, NT1114, NT2114, & NT2334

The Cisco Certification indicates a strong foundation in and apprentice knowledge of networking. CCNA certified professionals can install, configure, and operate LAN, WAN, and dial access services for small networks (100 nodes or fewer), including but not limited to use of these protocols: IP, IGRP, Serial, Frame Relay, IP, VLANs, RIP, Ethernet and Access Lists. Certifications for students include:

- Cisco Certified Entry Network Technician [CCENT](#)
- Courses provided by Program CS1004 & CS1104
- Cisco Certified Network Associate [CCNA](#)
- Courses Provided by Program CS1004, CS1104, CS1204, CS1304

The Systems Security Certified Practitioner (SSCP) Certification from ICS<sup>2</sup> demonstrates security knowledge in one of the fastest-growing fields in IT. ICS<sup>2</sup> is the world leader in educating and certifying security professionals worldwide. The SSCP credential ensures that candidates continuously monitor systems to safeguard against security threats while having the knowledge to apply security concepts, tools and procedures to react to security incidents. The SSCP credential demonstrates competency in Access Controls; Cryptography; Malicious Code and Activity; Monitoring and Analysis; Networks and Communications; Risk, Response and, Recovery and; Security Operations and Administration. Certifications for students include:

- Systems Security Certified Practitioner [SSCP](#)
- Course Provided by Program CS2014

**2. Provide an outline for each program curriculum, including the sequence of courses.**

The sequence of courses include the associate of applied science degree, technical certificates, and certificates of proficiency showing program curriculum and sequence of courses are located in **Appendix A** of this self-study.

**3. State the degree requirements, including general education requirements, institutional, college or school requirements, and major requirements.**

Degree, general education, college and major requirements are indicated on the degree plan which is located in **Appendix A** of this self-study.

4. **Indicate the semester/year the major/program courses were last offered. Exclude general education courses.**

**Core Courses:**

CS-1004 Cisco Networking I	Fall 2012
EE-2804 Basic PC Troubleshooting	Fall 2012
NT-1014 Support Network Clients	Fall 2012
CS-1104 Cisco Networking II	Spring 2013
EE-2904 Advanced PC Troubleshooting	Spring 2013
NT-1114 Support Network Servers	Spring 2013
NT-2204 Security +	Fall 2012
CS-2014 Enterprise Security	Spring 2013

**Computer Technician Emphasis Courses:**

CS-2084 A+ Essentials	Fall 2012
NT-2444 Network +	Fall 2012
CS-2094 A+ Practical Applications	Spring 2013
NT-2464 Server +	Spring 2013

**Network & System Administrator Courses:**

CS-1204 Cisco Networking III	Fall 2012
NT-2114 Support Network Infrastructure	Fall 2012
CS-1304 Cisco Networking IV	Spring 2013
CS-2334 Active Directory	Spring 2013

5. **Provide syllabi for discipline-specific courses and departmental objectives for each course.**  
Course syllabi are attached in **Appendix B** of this self-study.

6. **Outline the process for the introduction of new courses, including all internal curriculum review processes and the findings.**

Faculty makes new course recommendations with justifications to the Vice chancellor for academics. Course revisions or additions to degree or certificates require additional approval of the curriculum committee. Changes to degree of more than 10 credit hours require notification to the Arkansas Department of Higher Education. One new course, CS-2114 Business Continuity & Recovery has been added to the program course offerings in the last three years as a free elective. No other degree or certificate changes have been made within the last three years.

7. **List courses in the proposed degree program currently offered by distance delivery.**  
The computer information technology program does not currently have courses offered by distance delivery.

- 8. Describe the instructor-to-student and student-to-student interaction for distance courses (prerequisite courses, lab requirements, examination procedures-online/proctored, and instructor response to student assignments).**

The computer information technology program does not currently have courses offered by distance delivery.

### **III. Program Faculty (full-time/adjunct/part-time)**

- 1. Provide curriculum vitae or program faculty information form for all full-time program faculty. The vita or form should include the following: all degrees and institutions granting the degrees; field or specialty of degrees; number of years employed as program faculty at the institution; current academic rank, if applicable; professional certifications/licenses; evidence of quality and quantity of creative and scholarly/research activity; evidence of quality and quantity of service activities; evidence of professional activities and non-teaching work experiences related to courses taught; list of course numbers/course titles of credit courses taught over the past two academic years; and other evidence of quality teaching.**

The vitas for full-time faculty are attached in **Appendix C** of this self-study.

- 2. Indicate the academic credentials required for adjunct/part-time faculty teaching major/program courses.**

SAU Tech adheres to the academic credential requirements of faculty for non-transfer terminal career and technical degree programs as outlined in the accreditation policies of the Higher Learning Commission of the North Central Association of Colleges and Schools. Adjunct faculty members are required to hold the same minimum credential levels.

- 3. Describe the orientation and evaluation processes for faculty, including adjunct and part-time faculty.**

Faculty and adjunct faculty orientation provides the new employee with information that will ease the transition into the workplace; paints a precise picture of the department and the institution as a whole; introduces the new employee to departmental goals, policies and procedures, customs and traditions; conveys the employer's expectations; relieves the new employee's anxieties about starting a new job; and inspires the new employee to have a good attitude toward the college and his/her new job.

New employees are oriented by the college's human resources officer and the employee's immediate supervisor. Each new employee is given an orientation packet on the first day of employment. The new employee orientation packet is divided into five sections:

a welcome letter from chancellor, an orientation checklist, human resources information, payroll and benefits information, and departmental information.

After completing the orientation checklist, the human resources and payroll and benefits staff as well as the employee and their supervisor, must sign and date the form. Since the departmental orientation is the final step in the process, the departmental supervisor must return the original checklist to the human resources office. The employing department

retains a copy of the checklist in the department files and provides the new employee with a copy. The original is returned to the human resources office approximately thirty (30) days from the date of hire.

During the first two years of employment, evaluation is intensive. Evaluation consists of student evaluations of teaching for course taught by faculty, classroom observation by the vice chancellor for academics (or his designee) at least once each semester, and annual self-evaluations.

After the initial first two years of employment, student evaluations continue for every course. During the third and fourth years, the vice chancellor for academics or designee observes the instructor once each year. After the fourth year, faculty are not observed unless deemed necessary by the vice chancellor for academics. Faculty continue to submit annual self-evaluations, and the vice chancellor for academics evaluates faculty based upon student evaluations, self-evaluations, assessment data, student success data, and professional development.

Classroom observations are conducted on adjunct faculty in all classes taught each semester regardless of years of adjunct service.

**4. *Provide average number of courses and number of credit hours taught by full-time program faculty for current academic year.***

A full-time faculty load is 15 credit hours. Faculty members are allowed to carry one course overload. Additional course overloads must be approved by the Vice chancellor for academics and the Chancellor. Loads for the current academic year are:

Robert Brown	Fall 2012: 6 courses, 22 credit hours, 2 overload courses Spring 2013: 6 courses, 22 credit hours, 2 overload courses
Jill McCollum	Fall 2012: 5 courses, 19 credit hours, 1 overload course Spring 2013: 5 courses, 19 credit hours, 1 overload course

## **IV. Program Resources**

**1. *Describe the institutional support available for faculty development in teaching, research, and service.***

SAU Tech provides professional development funds under the vice chancellor for academics for faculty to retain needed industry-standard certifications. In addition, the faculty senate group provides funding for travel and professional-development opportunities of their choosing for faculty. The college requires faculty to maintain up-to-date certifications.

**2. Describe the professional development of full-time program faculty over the past two years including the institutional financial support provided to faculty for the activities.**

Faculty training/professional development for **Jill McCollum** (Approximately \$6,000):

4/15/2011	CSEC Meeting Little Rock, AR
6/27/2011	Cisco Networking Academy Conference
6/28/2011	Cisco Networking Academy Conference
6/29/2011	Cisco Networking Academy Conference
8/18/2011	Energize the Enthusiasm that Exists Within
8/18/2011	Sexual Harassment Training
8/18/2011	Student Retention Session
8/19/2011	Internet Faculty Training Session
10/11/2011	Grant Writing Workshop
11/9/2011	CSEC Meeting Little Rock, AR
11/10/2011	CSEC Training Principles of Information Assurance
11/11/2011	CSEC Training Principles of Information Assurance
11/12/2011	CSEC Training Principles of Information Assurance
12/12/2011	CSEC Training Network Security
12/13/2011	CSEC Training Network Security
12/14/2011	CSEC Training Network Security
12/15/2011	CSEC Training Information Security Management
12/16/2011	CSEC Training Information Security Management
1/5/2012	Grant Writing Workshop
3/8/2012	CSEC Training Secure E-Commerce
3/9/2012	CSEC Training Secure E-Commerce
3/28/2012	ARE-ON Webinar
4/11/2012	ARE-ON Webinar
4/25/2012	ARE-ON Webinar
5/9/2012	ARE-ON Webinar
5/21/2012	CSEC Training Forensics
5/22/2012	CSEC Training Forensics
5/23/2012	CSEC Training Forensics
5/24/2012	CSEC Training Forensics
5/25/2012	CSEC Training Forensics
6/4/2012	CSEC Training Certified Ethical Hacker
6/5/2012	CSEC Training Certified Ethical Hacker
6/6/2012	CSEC Training Certified Ethical Hacker
6/7/2012	CSEC Training Certified Ethical Hacker
6/8/2012	CSEC Training Certified Ethical Hacker
6/18/2012	Cisco Networking Academy Conference

6/19/2012	Cisco Networking Academy Conference
6/20/2012	Cisco Networking Academy Conference
7/11/2012	ARE-ON Webinar
7/23/2012	CSEC Training Forensics Tool Kit
7/24/2012	CSEC Training Forensics Tool Kit
7/25/2012	CSEC Training Forensics Tool Kit
7/26/2012	CSEC Training Forensics Tool Kit
7/27/2012	CSEC Training Forensics Tool Kit
8/22/2012	Emergency Training
8/22/2012	Child Maltreatment Training
8/22/2011	POISE Early Reporting System
8/22/2012	Sexual Harassment Training
10/2/2012	SoftChalk Cloud Training
10/14/2012	AATYC
10/15/2012	AATYC
10/16/2012	AATYC
10/19/2012	PBL Fall Leadership Conference
10/20/2012	PBL Fall Leadership Conference
10/23/2012	Self-Defense Training
10/28/2012	STEM Technology Conference
10/29/2012	STEM Technology Conference
10/30/2012	STEM Technology Conference
10/31/2012	STEM Technology Conference
10/29/2012	Quality Matters Meeting
1/2/2013	Quality Matters Training
1/3/2013	Quality Matters Training

Faculty training/professional development for **Robert Brown** (Approximately \$12,000):

11/10/2011	Backboard 9.1 Training
4/12/2012	Information Systems Security Training
4/13/2012	Information Systems Security Training
4/14/2012	Information Systems Security Training
4/15/2012	Information Systems Security Training
6/12/2012	Certified Ethical Hacking Boot Camp
6/13/2012	Certified Ethical Hacking Boot Camp
6/14/2012	Certified Ethical Hacking Boot Camp
6/15/2012	Certified Ethical Hacking Boot Camp
6/16/2012	Certified Ethical Hacking Boot Camp
10/12/2012	Quality Matters
11/12/2012	CISSP Boot Camp
11/13/2012	CISSP Boot Camp
11/14/2012	CISSP Boot Camp

11/15/2012	CISSP Boot Camp
11/16/2012	CISSP Boot Camp
11/17/2012	CISSP Boot Camp
12/12/2012	CSEC Training Secure E-Commerce
12/13/2012	CSEC Training Secure E-Commerce
12/13/2012	CSEC Training Enterprise Security
12/14/2012	CSEC Training Enterprise Security
12/15/2012	CSEC Training Enterprise Security
1/2/2013	Quality Matters
1/3/2013	Quality Matters
1/13/2013	Quality Matters
2/18/2013	CSEC Network Security
2/19/2013	CSEC Network Security
2/20/2013	CSEC Network Security
2/21/2013	CSEC Network Security
2/22/2013	CSEC Network Security

**3. Provide the annual library budget for the program or describe how library resources are provided for the program.**

SAU Tech’s Library does not allocate its budget according to programs or any other formal formulae (i.e. enrollment, student semester credit hour production, etc.); rather materials are purchased based on instructor recommendations and requests. Library allocations for the computer information technology program for the previous three years totaled \$999.00.

**4. Describe the availability, adequacy, and accessibility of campus resources (research, library, instructional support, instructional technology, etc.).**

The college provides on-site professional development opportunities as well as web-based professional development opportunities for faculty. The computer information technology program has annual equipment and supplies budget of \$20,000 and a student worker budget of \$2,000. In addition, the vice chancellor for academics manages the academic program improvement budget of \$60,000 for special or emergency academic program equipment purchases shared by all programs. The college replaces computers in all programs on a 30-month rotation. The computer services department provides technological support to programs as needed. The college attempts to maintain up-to-date, industry-standard labs for academic programs.

**5. Provide a list of program equipment purchases for the past three years.**

Qty	Description	Date	Cost
3	C1841 Router	Feb-10	
3	Catalyst 2960-24TT Switch	Feb-10	
1	SMART Board & Projector	Apr-10	\$4,464.63
21	Dell Lease PCs	Jul-10	\$24,789.24

1	HP LaserJet P2035n	Sep-10	\$234.99
3	C1841 Router	Mar-11	\$2,992.50
6	Catalyst 2960-24TT Switch	Mar-11	\$4,065.00
20	Linksys AE1200 Wireless-N USB Adapter	Oct-11	\$639.65
1	HP LaserJet P2035n	Sep-11	\$234.99
1	XFX Pro 1000W PS	Mar-12	\$229.99
15	Dell Leased PCs	Jul-10	\$15,840.00
6	Equipment 72U Racks		\$2,125.00
6	Server Cases		\$1,445.00
6	Server Motherboard		\$1,345.00
6	Server RAM		\$445.00
10	XFH HD-6677-ZHF3 Radeon Video Cards	Feb-12	\$849.90
10	VisionTek PC3-14900 DDR3 8GB	Feb-12	\$722.20
7	Silverstone SDP08 Converter	Feb-12	\$60.69
5	HP 22" Touch Screen LCD monitors	Feb-12	\$ 1,349.95
10	Asus Sabertooth 990TF Mother boards	Feb-12	\$ 1,900.00
5	Asus Sabertooth 990TF Mother boards	Oct-12	\$950.00
18	Power Supplies		\$975.00
10	AMD FX-6100 CPU	Feb-12	\$1,535.00
5	AMD FX-6100 CPU	Oct-12	\$595.00
10	G. Skill 8GB 240Pin DDR3 RAM	Feb-12	\$599.90
5	G. Skill 8GB 240Pin DDR3 RAM	Oct-12	\$274.95
18	500 GB SATA Hard Drives		\$899.82
15	Crucial CT064M4SSD2 SSD's	Oct-12	\$1,199.85
15	Workstation Stands		\$1,125.00
1	iPad	Jan-13	\$829.00
1	Passmark PC Tool Kit		\$495.00
1	Passmark OsForensic Software	Nov-12	\$499.00
1	Passmark BurnIn Pro	Nov-12	\$79.00
1	Pasmark TestLog Softwre	Nov-12	\$99.00
1	Passmark Wireless Mon V4 Pro Software	Nov-12	\$49.00
1	Passmark W-Spy DBx Spectrum Analyzer	Nov-12	\$975.00
1	Passmark Chanalyzer Pro	Nov-12	-
1	Wi-Fi Pineapple	Nov-12	\$159.99
1	Ubetooth One	Nov-12	\$119.99
1	Rubby Duckie	Nov-12	\$39.99
1	Reaver Pro	Nov-12	\$99.00
1	Alfa USB Wi-Fi	Nov-12	\$37.99
1	AB Class room Management software UP	Oct-12	\$146.00

1	Crucial M4 CT256M4SSD1 2.5" 256GB SSD	Mar-12	\$399.99
5	Logitech MK120 Black Wired Keyboard	Mar-12	\$134.95
5	Artic Silver	Mar-12	\$64.90
1	Enermax Power Supply	Feb-12	\$249.99
1	Microsoft DreamSpark Student Alliance	Feb-12	\$759.00
1	Cartridge EVGA 132-GT-E768-TR X58	Sep-11	\$208.99
1	Motherboard	Feb-11	\$259.99
1	Corsair CSSD-P3128GB2 128GB SSD	Feb-11	\$319.99
10	Black Computer Case w/Hot Swap Bay	Mar-11	\$999.90
2	Samsung 27" 5MS Monitors	Nov-10	\$719.98
17	Lite-on IHAS224 DVD Burners	Nov-10	\$339.83
5	8 Channel SATA PCIX 64Bit 133Mhz Card	May-10	\$780.00
1	i7-960 Intel CPU	Feb-11	\$309.99
5	HD 500G Western Digital WD3000HLFS	Feb-11	\$749.95

## V. Instruction via Distance Technology

*This section should be completed if at least 50 percent of any program/major course is delivered electronically.*

The computer information technology program does not currently have any distance learning courses.

## VI. Majors/Declared Students

1. *State the number of undergraduate/graduate majors/declared students in each degree program under review for the past three years.*

Matrix of declared students in the degree and certificate programs for the past three years is located in **Appendix D** of this self-study.

2. *Describe strategies to recruit, retain, and graduate students.*

Faculty members provide brief program overviews to high school students who visit the campus during college day and preview days each semester. Students are exposed to lab environments and the faculty explains methods and expectations of the program and the employment skills that can be acquired through the program. SAU Tech employs two full-time recruiters who engage traditional and non-traditional potential students throughout the year. The college's retention efforts include an early alert system, mentoring, academic advising, and tutoring. In addition, faculty use lab time for tutoring students. Students are involved in activities including the Cisco NetRiders Competition and PBL's competition in computer information technology. The college's program has a small student-to-instructor

ratio.

**3. Provide the number of program graduates over the past three years.**

Matrix of program graduates over the past three years is located in **Appendix D** of this self-study.

## **VII. Program Assessment**

**1. Describe the program assessment process and provide outcomes data.**

All SAU Tech's academic programs fall under the college's academic assessment plan. The college assesses at the program and course level with student learning goals and outcomes. All academic programs also assess the five general education competencies expected of all graduates in the areas of communication literacy, computer literacy, global awareness, critical thinking, and research skills.

The computer information technology assessment plan with results currently consists of 146 pages and is therefore too large to include in this self-study. The entire program assessment report is available on request. Below is a summary of the assessment results for the previous two years.

Student competencies on program goals and outcomes in the networking track emphasis were at 81.5 percent in academic year 2010-2011 and 86.25 percent in academic year 2011-2012.

Student competencies on program goals and outcomes in the technician track emphasis were at 96.0 percent in academic year 2010-2011 and 94.5 percent in academic year 2011-2012.

**2. Describe program/major exit or capstone requirements.**

Computer information technology program students are expected to acquire computer literacy skills that prepare them for employment within the network technician field or the computer technician field and/or continuing education. The program curriculum is designed to provide the necessary competencies, skills, and knowledge to meet this program expectation. The program does not currently have a capstone course or exam. The program level assessment plan is designed to measure, over the course of the program, student skills and knowledge for program completers.

**3. Provide information on how teaching is evaluated, the use of student evaluations, and how the results have affected the curriculum.**

During the first two years of employment, evaluation is intensive. Evaluation consists of student evaluations of teaching for every class, classroom observation by the vice chancellor for academics (or designee) at least once each semester, and annual self-evaluations.

After the initial first two years of employment, student evaluations continue for every class. During the third and fourth years, the vice chancellor for academics or designee will observe the instructor once each year. After the fourth year, faculty will not be observed unless deemed necessary by the vice chancellor for academics. Faculty will continue to submit self-evaluations each year, and vice chancellor for academics will evaluate faculty based upon student evaluations, self-evaluations, assessment data, student success data, and professional development.

Student evaluations are conducted in every course each semester. The academic departmental secretaries are responsible for overseeing web-based evaluations. The office of planning, accountability and development processes completed assessments. Three copies of the statistical results and student comments are prepared. One copy is given to the instructor, one to the vice chancellor for academics for use in the faculty evaluation process and for record keeping, and one for the chancellor.

In addition, course and program level student learning assessment results are evaluated by the college's assessment committee. The purpose of the college's assessment of student learning is improvement of teaching and learning. Data is collected by faculty, analyzed, and used to make relevant revisions to program curricula, courses, and teaching methodologies for the purpose of improving student knowledge and success of program outcomes, goals and objectives.

**4. Provide transfer information for major/declared students including the receiving institutions for transfer and programs of study.**

Until recently the college has been unable to track transfer data. However, with the recent purchase of membership in the National Student Clearinghouse, the college will now be able to track transfer data as long as the institution the student transfers into also uses the service. The Arkansas Department of Higher Education has a process in place to track transfer of students. The data is below.

<b>YEAR</b>	<b>STUDENT</b>	<b>INSTITUTION</b>	<b>PROGRAM</b>
2010	DAVIS, Daniel Ethan	Henderson State University	Computer Science
2010	HALEY, Christopher R.	University of Arkansas-Fayetteville	Unknown
2010	MEADOR, Brandon T.	Henderson State University	Computer Science
2011	YERBY, Cody Alan	Southern Arkansas University-Magnolia	Unknown
2012	NONE FOUND	Not Applicable	Not Applicable

**5. Provide information for program graduates continuing their education by entering graduate school or by performing volunteer service.**

SAU Tech nor the Arkansas Department of Higher Education has a process in place to track transfer of students into graduate programs or volunteer service.

**6. *Provide aggregate results of student/alumni/employer satisfaction surveys.***

The college currently does not have a formal process in place to collect student/alumni/employer satisfaction information. However, faculty members maintain contact with employers regarding satisfaction with the skills and knowledge of graduates hired. Faculty reported that employers are very pleased with the technical skills of SAU Tech's computer information technology graduates. Employers have suggested that graduates need more soft skills and program faculty are working to infuse more soft skill curricula into the program.

**7. *Describe how the program is aligned with the current job market needs of the state or local communities.***

Employers looking for computer technicians can draw from our graduates who have the required skills, but also from those who have certified by CompTIA A+. Employers looking for entry-level information security personnel, can draw from our graduates with the required skills and mid-level security specialists from those who possess CompTIA Security+ Certifications. Employers looking for entry level network specialists, can draw from our graduates with the required skills and mid-level network specialists from those who possess CompTIA Network+ and Cisco Certifications. Employers looking for advanced security specialists can draw from our graduates with the required skills and possess ISC<sup>2</sup> SSCP Certifications. Employers looking for computer technicians can draw from our graduates who have the required skills, or certified employees from those who have certified CompTIA A+.

Employers looking for Cisco Network Specialists can draw from our graduates who have the required skills, and Network Administrators who possess Cisco CCNA certifications. Employers looking for entry level Microsoft specialists can draw from our graduates with the required skills and Microsoft System Administrators from those who possess Microsoft MCITP Certifications

**8. *Provide job placement information for program graduates including the number of graduates placed in jobs related to the field of study.***

Faculty attempted to contact graduates from 2010-2012 to obtain job placement information including names of employer, average hourly rate of pay or salary, and if the company and position held required the credential obtained or if skills obtained in program were useful on the job. Not all graduates were able to be reached and those reached and interviewed did not provide all data requested. Job placement information which was obtained from graduates is provided in **Appendix E** of this self-study.

## **VIII. Program Effectiveness (Strengths & Opportunities)**

**1. *List the strengths of the program.***

Significant strengths of the computer information technology program are that both full-time faculty members hold Master's degrees and are current in industry-standard certifications in their field of expertise. The program is provided using the latest technology, software, and equipment needs for program instruction with reasonable budget limits.

The program has a strong, industry-based program advisory committee. Current committee members are:

Caleb Wagon, Technology Specialist, Sheridan Arkansas School District  
David Miller, Information Technology Site Manager, Aerojet Corporation  
Gary Hickson, Assistant Director for Networks/Telecommunications, Southern Arkansas University  
Paul Honnell, Information Technology Program Manager, Lockheed Martin Corporation  
Charles Biggers, System Administrator, Spectra Technologies  
John Pipkin, District Technology Coordinator, Harmony Grove Arkansas School District  
Andrew Qualls, Human Resources Systems & Project Manager, Murphy Oil Corporation

**2. List the areas of the program most in need of improvement.**

Industry certification exam fees have hindered many students who otherwise would be willing to take them. Administration and faculty are considering options to solve this issue such as course fees to cover certification costs or grant funding for exam vouchers.

Certification Exam approximate costs are:

Microsoft/MCITP	\$ 80 per Exam – 5 Exams
CompTIA Exams:	
A+	\$173 per Exam – 2 Exams
Security+	\$266 per Exam – 1 Exam
Network+	\$246 per Exam – 1 Exam
Cisco CCENT	\$150 per Exam – 1 Exam
Cisco CCNA	\$295 per Exam – 1 Exam
ISC <sup>2</sup> SSCP	\$250 per Exam – 1 Exam

Another area of concern is providing job placement services for students successfully completing the program. The college is investigating the possibility of hiring a student success and placement coordinator which would resolve this program concern. Currently there is no process for tracking students into the workforce or continuing education after graduation.

**3. List program improvements accomplished over the past two years.**

The college has recently enrolled in the CompTIA Authorized Partner Program. The CompTIA Authorized Partner Program for Academy Partners offers a robust educational program designed to assist academic institutions, nonprofit organizations, and government retraining agencies in enhancing the learning experience for students preparing for an IT career.

The CompTIA Authorized Partner Program helps students acquire the necessary knowledge, skills, and credentials for a successful IT career path. This includes resources to help students choose potential paths of employment, and education on opportunities for long-term career growth. The program includes information, tools, and resources designed to help school administrators and instructors plan, prepare, and deliver an effective IT curriculum.

**4. Describe planned program improvements, including a timetable and the estimated costs. Identify program improvement priorities.**

- A. Marketing of the program as a leader in IT instruction fits within the college's core enrollment goals. The estimated cost is \$5000 per year.
- B. Maintaining up-to-date, industry-standard technology in labs is an on-going priority for the program with an estimated cost of \$20,000 per year.
- C. Develop a comprehensive student tracking system for monitoring student development that ensures students retention and success. The cost is unknown at this time.
- D. Develop additional credentials based on program curricula at no cost:
  - i. Technical Certificate in Information Systems Security
  - ii. Technical Certificate in Computer Technician
  - iii. Certificate of Proficiency in IT Network Specialist
  - iv. Certificate of Proficiency in IT Security Specialist

## **IX. Institutional Review Team**

***List the names/departments of this self-study, the committee chair and committee members.***

Robert Gunnels, Vice Chancellor for Academics, Chair  
Jill McCollum, Computer Information Technology, Faculty  
Robert Brown, Computer Information Technology, Faculty  
Caleb Wagnon, Sheridan School District  
David Miller, Aerojet Corporation  
Gary Hickson, Southern Arkansas University  
Paul Honnell, Lockheed Martin Corporation  
Charles Biggers, Spectra Technologies  
John Pipkin, Harmony Grove School District  
Andrew Qualls, Murphy Oil Corporation

**APPENDIX A**  
**Computer Information Technology**  
**Program Credentials**

**COMPUTER INFORMATION TECHNOLOGY**  
*Associate of Applied Science Degree*

Emphasis Area:  Network & System Administrator       Computer Technician Emphasis

DEVELOPMENTAL COURSE WORK			Semester	Grade	Credits	Comments
<b>Need</b>	<b>REQUIRED according to placement test scores such as: ACT, ASSET, COMPASS or SAT</b>					
<input type="checkbox"/>	CO0143	Introduction to Language Arts			3	
<input type="checkbox"/>	CO0243	Writing Workshop			3	
<input type="checkbox"/>	GSTD1003	Freshman Seminar			3	
REQUIREMENTS			Semester	Grade	Credits	Comments
<b>Need</b>	<b>First Semester:</b>				<b>(15)</b>	
<input type="checkbox"/>	CS1004	CISCO Networking I			4	
<input type="checkbox"/>	EE2804	Basic PC Troubleshooting			4	
<input type="checkbox"/>	MATH1003	Technical Math			3	
<input type="checkbox"/>	NT1014	Support Network Clients			4	
<b>Need</b>	<b>Second Semester:</b>				<b>(15)</b>	
<input type="checkbox"/>	ENGL1113	Composition I			3	
<input type="checkbox"/>	CS1104	CISCO Networking II			4	
<input type="checkbox"/>	EE2904	Advanced PC Troubleshooting			4	
<input type="checkbox"/>	NT1114	Support Network Servers			4	
<b>Need</b>	<b>Third Semester</b>				<b>(15)</b>	
<input type="checkbox"/>	ENGL1123	Composition II <b>or</b>			3	
<input type="checkbox"/>	CO2213	Technical Writing				
<input type="checkbox"/>	NT2204	Security +			4	
<input type="checkbox"/>	CS/NT	Emphasis Elective			4	
<input type="checkbox"/>	CS/NT	Emphasis Elective			4	
<b>Need</b>	<b>Fourth Semester</b>				<b>(15)</b>	
<input type="checkbox"/>	CS2014	Enterprise Security			4	
<input type="checkbox"/>	CS/NT	Emphasis Elective			4	
<input type="checkbox"/>	CS/NT	Emphasis Elective			4	
<input type="checkbox"/>	3	Social Science Elective			3	
<b>Total Requirements:</b>					<b>60</b>	
<b>STUDENTS SHOULD CHOOSE EMPHASIS AREA TRACK FOR ELECTIVES:</b>						
<b>Network &amp; System Administrator Emphasis:</b>				<b>Computer Technician Emphasis:</b>		
<b>Third Semester</b>				<b>Third Semester</b>		
CS1204	CISCO Networking III			CS2084	A+ Essentials	
NT2114	Support Network Infrastructure			NT2444	Network +	
<b>Fourth Semester</b>				<b>Fourth Semester</b>		
CS1304	CISCO Networking IV			CS2094	A+ Practical Applications	
CS2334	Active Directory			NT2464	Server +	

*Revised May 23, 2012*

*Revised May 23, 2012*

*Certificate of Proficiency*  
**A+ CERTIFICATION**

Need	REQUIREMENTS		Semester	Grade	Credits	Comments
<input type="checkbox"/>	CS2084	A+ Essentials			4	
<input type="checkbox"/>	CS2094	A+ Practical Applications			4	
<b>Total Requirements:</b>					<b>8</b>	

*Revised April 26, 2012*

*Certificate of Proficiency*  
**COMPUTER INFORMATION – CISCO NETWORKING**

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

*I understand that when seeking a degree, I may be required to enroll in basic skills courses as a result of my test scores and Arkansas Law, Act 1052, and it will take additional semester(s) to complete a degree at SAU Tech.*

Need	REQUIREMENTS		Semester	Grade	Credits	Comments
<input type="checkbox"/>	CS1004	CISCO Networking I			4	
<input type="checkbox"/>	CS1104	CISCO Networking II			4	
<input type="checkbox"/>	CS1204	CISCO Networking III			4	
<input type="checkbox"/>	CS1304	CISCO Networking IV			4	
<b>Total Requirements:</b>					<b>16</b>	

*April 24, 2012*

*Certificate of Proficiency*  
**COMPUTER INFORMATION TECHNOLOGY**  
**Microsoft Certified IT Professional**

Need	REQUIREMENTS		Semester	Grade	Credits	Comments
<input type="checkbox"/>	NT1014	Support Network Clients			4	
<input type="checkbox"/>	NT1114	Support Network Servers			4	
<input type="checkbox"/>	NT2114	Supporting Network Infrastructure			4	
<input type="checkbox"/>	CS2334	Active Directory			4	
<b>Total Requirements:</b>					<b>16</b>	

June 20, 2012

*Certificate of Proficiency*  
**COMPUTER ENGINEERING**

The Certificate of Proficiency in Computer Engineering is designed for students enrolled in the SAU Tech Career Academy Computer Engineering Program and concurrent credit students completing the appropriate Concurrent Enrollment Plan in Computer Engineering at partner high schools/secondary academies. This CP will fold directly into the AAS in Computer Information Technology as a career pathway.

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Need	REQUIREMENTS		Semester	Grade	Credits	Comments
<input type="checkbox"/>	MIS1003	Introduction to Computers			3	
<input type="checkbox"/>	EE2804	Basic PC Troubleshooting			4	
<input type="checkbox"/>	EE2904	Adv PC Troubleshooting			4	
<input type="checkbox"/>	NT1014	Support Network Clients			4	
<b>Total Requirements:</b>					<b>15</b>	

**APPENDIX B**  
Computer Information Technology Core Course Syllabi

**Southern Arkansas University Tech**  
**CS-1004 Cisco Networking I**  
**Instructor: Jill McCollum**  
**Course Syllabus**  
**Fall 2012**

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**SAU Tech Mission Statement**

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**SAU Tech Assessment Philosophy**

Southern Arkansas University Tech has developed a program to assess the learning outcomes of its students to assure that the College is achieving its mission. The Assessment Program is designed to measure the level of skills and competencies gained by students at the program and course levels as well as within the General Education curriculum for all Associate Degree students. Assessment activities are performed in a number of ways including placement exams prior to enrollment, program level goals and objectives, and classroom assessment techniques. Faculty identifies desired student learning outcomes on the program and classroom level and then assesses through various methodologies how well those outcomes have been achieved. The college uses the data obtained from assessment measures to improve student academic achievement and the instructional methodologies delivered by the institution.

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**SAU Tech ADA Policy**

SAU Tech recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements necessary for an A.A., A.S., or A.A.S. degree or certificate programs in the same manner expected of nondisabled students. In compliance with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, qualified students with disabilities may request that appropriate course accommodations be considered. Students are encouraged to meet with Disability Services to develop a plan for their academic accommodations. Requests for accommodations must be made within two (2) weeks of the start of each semester.

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**I. Course Name and Number:** CS-1004 Cisco Networking I

**II. Meeting Schedule:** MW 12:45-2:30 & 5:30-7:15

**III. Instructional Information:**

Instructor: Jill McCollum  
Phone: 870-574-4539  
Fax: 870-574-4538

Office: Tech Engineering Bldg. #13  
e-mail: [jmccollu@sautech.edu](mailto:jmccollu@sautech.edu)

Office Hours: MW 2:30-5:30 PM TR 9:00-11:00 AM

**IV. Prerequisites:** None

**V. Course Description:**

This is the first of four semester courses designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. A task analysis of current industry standards and occupational analysis was used to develop the content standards. Instruction includes, but is not limited to, introduction to computers, peripherals and operating systems; network and Internet connections; network addressing; network services and basic security; and basic troubleshooting.

**VI. Course Outcomes:**

Upon successful completion of this course the student will achieve a minimum 70% proficiency on the following course outcomes:

1. Introduction to Computers, Peripherals and Operating Systems
2. Network and Internet Connections
3. Network Addressing
4. Network Services and Basic Security
5. Basic Troubleshooting

**Outcome Objectives/Measures:**

1. Introduction to Computers, Peripherals and Operating Systems
  - Conversion of Binary Data Representation
  - Identify and Describe the Purpose of Operating Systems, Applications, and Peripherals
2. Network and Internet Connections
  - Identify Logical and Physical Topologies
  - Define the Purpose of Networking Devices
  - Work with Cabling Standards
  - Implement a Wireless LAN
3. Network Addressing
  - Describe Public and Private Addressing
  - Static and Dynamic Address Assignment
4. Network Services and Basic Security
  - Differentiate between Communication Protocols
  - Identify Network Security Threats
5. Basic Troubleshooting
  - Explore Troubleshooting Methodologies
  - Use Common Troubleshooting Tools

**VII. Textbook & Learning Materials:**

Curriculum is on-line and Networking for Home and Small Businesses CCNA Discovery Learning Guide, Reid and Lorenz, Cisco Press 2008, ISBN#978-1-58713-209-4

**VIII. Supplies:**

3-ring binder, paper, and writing utensil

**IX. Course Requirements & Policies:**

1. In order to pass this course and eventually the CCNA exam, you **MUST** read the curriculum. This will be a rigorous and demanding class. In order to cover the required material we will move very quickly, you must keep up, as we cannot wait on you. Students are expected to attend ALL classes. This is **NOT** an Internet course your attendance is imperative. The hands-on labs that we will be doing in class for a grade will **NOT** be available for make-up, unless the instructor is notified in advance of a legitimate excuse. Discuss any makeup work immediately upon your return or it will not be accepted. Late work may be accepted late for a letter grade deduction. Two unexcused absences could cause you to be dropped from the class.
2. Students are expected to arrive for class on time. Students may enter the classroom after class has started, but should be careful not to disrupt class. Excessive tardiness should be avoided. Students who are tardy must see the instructor after class. Two tardies equals one absence.
3. All work you want credit for must be submitted prior to taking that unit's test. The on-line tests have to be activated by the instructor and will be taken in the lab. Always bring supplies to class with you.
4. Students shall **NOT** propagate (print) the curriculum. Students suspected of cheating will receive a score of zero. If it is determined that work has been shared, all parties involved will receive no credit for that assignment or exam. There will be no make-up for the missed score. Suspects are guilty until proven innocent.
5. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the Vice chancellor for academics to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

**X. Learning Assessments:**

Grades will be assigned based on on-line tests, skills tests, labs, quizzes, and assignments. There will be an on-line multiple choice test for each chapter. The final exams will be comprehensive and include a skills test and an on-line multiple-choice test. Tests will have a time limit. The Skills Final will include installation of a simple network, testing network functionality, and troubleshooting in a limited time. Grades will be assigned as follows: **Labs and assignments 25%, Chapter Tests 25%, Skills Final 25%, On-Line Final 25%.**

**XI. Mastery Level:**

Grades will be assigned according to the following scale:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = Below 60%

Revised 08/17/11

**Southern Arkansas University Tech**  
**CS-1104 Cisco Networking II**  
**Instructor: Jill McCollum**  
**Course Syllabus**  
**Spring 2013**

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- I. Course Name and Number:** CS-1104 Cisco Networking II
  
- II. Meeting Schedule:** MW 12:45-2:30
  
- III. Instructional Information:**  
Instructor: Jill McCollum                      Office: Tech Engineering Bldg. #13  
Phone: 870-574-4539                              e-mail: [jmccollu@sautech.edu](mailto:jmccollu@sautech.edu)  
Fax: 870-574-4538
  
- IV. Prerequisites:** CS1004 Cisco Networking I

**V. Course Description:**

This is the second of four semester courses designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. A task analysis of current industry standards and occupational analysis was used to develop the content standards. Instruction includes, but is not limited to, network terminology, devices, and protocols, topologies, OSI model, media, cable testing, LANs, Ethernet, switching, TCP/IP Addressing Protocol, routing and routed protocols, tools, and network standards.

**VI. Course Outcomes:**

Upon successful completion of this course the student will achieve a minimum 70% proficiency on the following course outcomes:

6. Implementing ISP Support, Services, and Responsibilities
7. Plan a Network Upgrade
8. Manage the Addressing Structure
9. Configuring Network Devices
10. Enable Routing

**Outcome Objectives/Measures:**

1. Implementing ISP Support, Services, and Responsibilities
  - OSI Model Troubleshooting
  - Creating and Using Help Desk Records
  - Support Services (DNS, HTTP, FTP)
  - Implement Security Tools
2. Plan a Network Upgrade
  - Conduct Site Surveys
  - Purchase and Maintain Equipment
3. Manage the Addressing Structure
  - Implement IP Addressing
  - Use NAT/PAT
4. Configuring Network Devices
  - Initial Router Configuration
  - Initial Switch Configuration
5. Enable Routing
  - Configure Interior Routing Protocols
  - Configure Exterior Routing Protocols

**VII. Textbook & Learning Materials:**

Curriculum is on-line and Working at a Small-to-Medium Business or ISP, CCNA Discovery Learning Guide, Cisco Press 2008, ISBN#9781587132100

**VIII. Supplies:**

Internet Access, 3-ring binder, paper, and writing utensil

**IX. Course Requirements & Policies:**

6. In order to pass this course and eventually the CCNA exam, you **MUST** read the curriculum. This will be a rigorous and demanding class. In order to cover the required material we will move very quickly, you must keep up, as we cannot wait on you. Students are expected to attend ALL classes. This is **NOT** an Internet course, your attendance is imperative. The hands-on labs that we will be doing in class for a grade will **NOT** be available for make-up, unless the instructor is notified in advance of a legitimate excuse. Discuss any makeup work immediately upon your return or it will not be accepted. Late work may be accepted late for a letter grade deduction. Two unexcused absences could cause you to be dropped from the class.
7. Students are expected to arrive for class on time. Students may enter the classroom after class has started, but should be careful not to disrupt class. Excessive tardiness should be avoided. Students who are tardy must see the instructor after class. Two tardies equals one absence.
8. All work you want credit for must be submitted prior to taking that unit's test. The on-line tests have to be activated by the instructor and will be taken in the lab. Always bring supplies to class with you.
9. Students suspected of cheating will receive a score of zero. If it is determined that work has been shared, all parties involved will receive no credit for that assignment or exam. There will be no make-up for the missed score. Suspects are guilty until proven innocent.
10. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the Vice chancellor for academics to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

**X. Learning Assessments:**

Grades will be assigned based on on-line tests, skills tests, labs, quizzes, and assignments. There will be an on-line multiple choice test for each chapter. The final exams will be comprehensive and include a skills test and an on-line multiple-choice test. Tests will have a time limit. Students must meet Cisco's attendance policy and take both the on-line Final and the Skills Final to be eligible to take further Cisco Networking classes. Grades will be assigned as follows: **Labs and assignments 25%, Chapter Tests 25%, Skills Final 25%, and Online Final 25%.**

**Mastery Level:**

Grades will be assigned according to the following scale:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = Below 60%

**Southern Arkansas University Tech**  
**CS-1204 Cisco Networking III**  
**Instructor: Jill McCollum**  
**Course Syllabus**  
**Fall 2012**

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**SAU Tech ADA Policy**

SAU Tech recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements necessary for an A.A., A.S., or A.A.S. degree or certificate programs in the same manner expected of nondisabled students. In compliance with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, qualified students with disabilities may request that appropriate course accommodations be considered. Students are encouraged to meet with Disability Services to develop a plan for their academic accommodations. Requests for accommodations must be made within two (2) weeks of the start of each semester.

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- I. Course Name and Number:** CS-1204 Cisco Networking III
  
- II. Meeting Schedule:** MW 8:30-10:15
  
- III. Instructional Information:**

Instructor: Jill McCollum	Office: Tech Engineering Bldg. #13
Phone: 870-574-4539	e-mail: <a href="mailto:jmccollu@sautech.edu">jmccollu@sautech.edu</a>
Fax: 870-574-4538	

Office Hours: MW 2:30-5:30 TR 9:00-11:00

**IV. Prerequisites:** CS1104 Cisco Networking II

**V. Course Description:**

This is the third of four semester courses designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. A task analysis of current industry standards and occupational analysis was used to develop the content standards. Instruction includes, but is not limited to, network infrastructure, switching, addressing, routing with distance vector and link-state protocols, implementing WAN links, filtering traffic with access lists, and troubleshooting.

**VI. Course Outcomes:**

Upon successful completion of this course the student will achieve a minimum 70% proficiency on the following course outcomes:

11. Implementing Switching
12. IP Addressing in an Enterprise
13. Configure Advanced Routing Protocols
14. Connect WAN Links
15. Filter Traffic

**Outcome Objectives/Measures:**

1. Implementing Switching
  - Prevent loops with STP
  - Segment with VLANs
  - Inter-VLAN routing
  - Trunking with VTP
2. IP Addressing in an Enterprise
  - Use VLSM
  - Implement CIDR
  - Incorporate NAT/PAT
3. Configure Advanced Routing Protocols
  - EIGRP
  - OSPF
4. Connect WAN Links
  - Configure HDLC
  - Configure PPP
5. Filter Traffic
  - Write Standard, Extended, and Named ACLs
  - Employ ACLs
  - Analyze ACLs

**VII. Textbook & Learning Materials:**

Curriculum is on-line and Introducing Routing and Switching in the Enterprise CCNA Discovery Learning Guide, Cisco Press 2008, ISBN#9781587132117

**VIII. Supplies:** Internet Access, 3-ring binder, paper, and writing utensil

**IX. Course Requirements & Policies:**

11. In order to pass this course and eventually the CCNA exam, you **MUST** read the curriculum. This will be a rigorous and demanding class. In order to cover the required material we will move very quickly, you must keep up, as we cannot wait on you. Students are expected to attend ALL classes. This is **NOT** an Internet course, your attendance is imperative. The hands-on labs that we will be doing in class for a grade will **NOT** be available for make-up, unless the instructor is notified in advance of a legitimate excuse. Discuss any makeup work immediately upon your return or it will not be accepted. Late work may be accepted late for a letter grade deduction. Two unexcused absences could cause you to be dropped from the class.
12. Students are expected to arrive for class on time. Students may enter the classroom after class has started, but should be careful not to disrupt class. Excessive tardiness should be avoided. Students who are tardy must see the instructor after class. Two tardies equals one absence.
13. All work you want credit for must be submitted prior to taking that unit's test. The on-line tests have to be activated by the instructor and will be taken in the lab. Always bring supplies to class with you,
14. Students shall **NOT** propagate (print) the curriculum. Students suspected of cheating will receive a score of zero. If it is determined that work has been shared, all parties involved will receive no credit for that assignment or exam. There will be no make-up for the missed score. Suspects are guilty until proven innocent.
15. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the Vice chancellor for academics to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

**X. Learning Assessments:**

Grades will be assigned based on on-line tests, skills tests, labs, quizzes, and assignments. There will be an on-line multiple choice test for each chapter. The final exams will be comprehensive and include a skills test and an on-line multiple-choice

test. Tests will have a time limit. Grades will be assigned as follows: **Labs and assignments 25%, Chapter Tests 25%, Skills Final 25%, On-Line Final 25%.**

**Mastery Level:**

Grades will be assigned according to the following scale:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = Below 60%



**V. Course Description:**

This is the fourth of four semester courses designed to provide students with classroom and laboratory experience in current and emerging networking technology that will empower them to enter employment and/or further education and training in the computer networking field. A task analysis of current industry standards and occupational analysis was used to develop the content standards. Instruction includes, but is not limited to, designing small enterprise LANs and WANS; selecting equipment, protocols, and topologies to meet customer requirements; implementing security; and analyzing traffic flow.

**VI. Course Outcomes:**

Upon successful completion of this course the student will achieve a minimum 70% proficiency on the following course outcomes:

16. Network Design
17. Characterize a Network
18. Network Monitoring
19. Hierarchical Addressing
20. Prototype and Test Network Design

**Outcome Objectives/Measures:**

1. Network Design
  - Redundancy and Convergence
  - Traffic Filtering and QoS
  - Wireless Considerations
  - WANS and Remote Access
2. Characterize a Network
  - Use Feature Navigator
  - Install and Update the IOS and Determine Capabilities
  - Inspect Hardware Options
3. Network Monitoring
  - Diagram Traffic Flows with NetFlow
  - Analyze Network Traffic with NBAR (Network-Based Application Recognition)
  - Manage the Network with SNMP (Simple Network Management Protocol)
4. Hierarchical Addressing
  - Use CIDR for Route Summarization
  - Design VLSM scheme
  - Describe IPv6
5. Prototype and Test Network Design
  - Incorporate Load Balancing and Floating Static Routes
  - Implement RSTP and VLANs on Switches
  - Employ PPP, VPNs, and Frame Relay for WAN links
  - Provide security with ACLs

**VII. Textbook & Learning Materials:**

Curriculum and chapter tests are on-line and Designing and Supporting Computer Networks, CCNA Discovery Learning Guide, Stewart/Adams, Cisco Press 2008, ISBN#9781587132124.

**VIII. Supplies:**

Internet Access, 3-ring binder, paper, and writing utensil

**IX. Course Requirements & Policies:**

16. In order to pass this course and eventually the CCNA exam, you **MUST** read the curriculum. This will be a rigorous and demanding class. In order to cover the required material we will move very quickly, you must keep up, as we cannot wait on you. Students are expected to attend ALL classes. This is **NOT** an Internet course, your attendance is imperative. The hands-on labs that we will be doing in class for a grade will **NOT** be available for make-up, unless the instructor is notified in advance of a legitimate excuse. Discuss any makeup work immediately upon your return or it will not be accepted. Late work may be accepted late for a letter grade deduction. Two unexcused absences could cause you to be dropped from the class.
17. Students are expected to arrive for class on time. Students may enter the classroom after class has started, but should be careful not to disrupt class. Excessive tardiness should be avoided. Students who are tardy must see the instructor after class. Two tardies equals one absence.
18. All work you want credit for must be submitted prior to taking that unit's test. The on-line tests have to be activated by the instructor and will be taken in the lab. Always bring supplies to class with you,
19. Students suspected of cheating will receive a score of zero. If it is determined that work has been shared, all parties involved will receive no credit for that assignment or exam. There will be no make-up for the missed score. Suspects are guilty until proven innocent.
20. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the Vice Chancellor for Instruction to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

**X. Learning Assessments:**

Grades will be assigned based on on-line tests, skills tests, labs, quizzes, and assignments. There will be an on-line multiple choice test for each chapter. The final exams will be comprehensive and include a skills test and an on-line multiple-choice test. Tests will have a time limit. Students must meet Cisco's attendance policy and take both the on-line Final and the Skills Final. Grades will be assigned as follows:

**Labs and assignments 25%, Chapter Tests 25%, Skills Final 25%, Online Final 25%.**

**XI. Mastery Level:**

Grades will be assigned according to the following scale:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = Below 60%

**Southern Arkansas University Tech**  
**CS-2334 Active Directory**  
**Instructor: Jill McCollum**  
**Course Syllabus**  
**Spring 2013**

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**SAU Tech Assessment Philosophy**

Southern Arkansas University Tech has developed a program to assess the learning outcomes of its students to assure that the College is achieving its mission. The Assessment Program is designed to measure the level of skills and competencies gained by students at the program and course levels as well as within the General Education curriculum for all Associate Degree students. Assessment activities are performed in a number of ways including placement exams prior to enrollment, program level goals and objectives, and classroom assessment techniques. Faculty identifies desired student learning outcomes on the program and classroom level and then assesses through various methodologies how well those outcomes have been achieved. The college uses the data obtained from assessment measures to improve student academic achievement and the instructional methodologies delivered by the institution.

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**SAU Tech ADA Policy**

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**I. Course Name and Number:** CS-2334 Active Directory

**II. Meeting Schedule:** Independent Study

**III. Instructional Information:**

Instructor: Jill McCollum  
Phone: 574-4539

Office: Technology Building #13  
e-mail: [jmccollu@sautech.edu](mailto:jmccollu@sautech.edu)

**IV. Prerequisites:** NT1114 Support Network Servers

**V. Course Description:**

This is the fourth of four courses designed to prepare students in becoming a Microsoft Certified Information Technology Professionals (MCITP). This course has been designed using the objectives for the Microsoft Certification Exam 70-640 Configuring Windows Server 2008 Active Directory. Students will learn to configure DNS, infrastructure, additional server roles, and certificate services for Active Directory; create and maintain objects and the environment in Active Directory. Topics may include installation, implementation, sites, global catalog, flexible single master operations, security, group policy, maintenance, troubleshooting, and disaster recovery as they relate to the Active Directory.

**VI. Course Outcomes:**

Upon successful completion of this course the student will achieve a minimum 70% proficiency on the following course outcomes:

1. Configure Domain Name System (DNS) for Active Directory
2. Configure the Active Directory Infrastructure
3. Configure Additional Active Directory Server Roles
4. Create and Maintain Active Directory Objects
5. Maintaining the Active Directory Environment
6. Configuring Active Directory Certificate Services

**Outcome Objectives/Measures:**

1. Configure Domain Name System (DNS) for Active Directory
  - Install and Configure DNS
  - Configure Advanced Zone Features
  - Implement Root Hints
2. Configure the Active Directory Infrastructure
  - Setup Site Replication
  - Troubleshoot Operations Masters
  - Design Trusts
3. Configure Additional Active Directory Server Roles
  - Install and Configure Lightweight Directory Services (AD LDS)
  - Install and Configure Federation Services (AD FS)
  - Install and Configure Rights Management Services (AD RMS)
4. Create and Maintain Active Directory Objects
  - Create Organizational Units, User Accounts, Computer Accounts, and Groups
  - Implement a Group Strategy
  - Use Object Management Tools
5. Maintaining the Active Directory Environment
  - Perform an Active Directory Backup and Restore

- Use Monitoring Tools
6. Configuring Active Directory Certificate Services
- Install Active Directory Certificate Services
  - Manage Certificate Templates, Requests, and Revocations
  - Explore Certificate Implementations

**VII. Textbook & Learning Materials:**

70-640 Configuring Windows Server 2008 Active Directory LabSim by TestOUT,  
ISBN# 978-1-935080-25-1

**VIII. Supplies:**

LabSim, 3-ring binder, paper, highlighter, and writing utensil

**IX. Course Requirements & Policies:**

1. This course uses a LabSim product where the course delivery is offered online. The labs are simulated on-line and quizzes and exams will be delivered online. The class will meet in the classroom and Internet access will be provided for the student's course. The instructor will be available to offer assistance. A student may work ahead of the proposed schedule. The student will need to work on the course outside of the assigned class time in order to make satisfactory progress following the proposed schedule. Objective Exams need to be taken in a proctored environment. If taken in a non-proctored environment no credit will be given (0%). Objective Exams may only be taken once for credit.
2. In order to pass this course and eventually the 70-646 exam, you **MUST** read the curriculum. Students are expected to attend **ALL** classes. The instructor must be notified of a legitimate excuse and in advance when possible. Discuss any makeup work immediately upon your return or it will not be accepted. Late work may be accepted late for a letter grade deduction. Two unexcused absences could cause you to be dropped from the class.
2. Students are expected to arrive for class on time. Students may enter the classroom after class has started, but should be careful not to disrupt class. Excessive tardiness should be avoided. Students who are tardy must see the instructor after class. Two tardies equals one absence.
3. Students suspected of cheating will receive a score of zero. If it is determined that work has been shared, all parties involved will receive no credit for that assignment or exam. There will be no make-up for the missed score. Suspects are guilty until proven innocent.
4. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be

required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the vice chancellor for academics to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

- X. Learning Assessments:** Grades will be assigned based on chapter tests, labs, objective exams, and assignments. The final exams will be comprehensive. Tests will have a time limit. Grades will be assigned as follows: **Chapter Tests, Labs, and Lesson Assignments 80%; Objective Exams 15%, and FINAL 5%.**

**XI. Mastery Level:**

Grades will be assigned according to the following scale:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = Below 60%

# Southern Arkansas University Tech

## NT1014 Supporting Network Clients

### Course Syllabus

#### Fall 2012

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#### **SAU Tech Assessment Philosophy**

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- I. Course Name and Number:** NT1014 – Supporting Network Clients
  
- II. Meeting Schedule:** TR 8:30-10:15
  
- III. Instructional Information:**

Instructor: Jill McCollum	Office: Tech Engineering Bldg. #13
Phone: (870) 574-4539	E-mail: <a href="mailto:jmccollu@sautech.edu">jmccollu@sautech.edu</a>

Office Hours: MW 2:30-5:30 TR 9:00-11:00
  
- IV. Prerequisites:** None

**V. Course Description** This is the first of four courses designed to prepare students in becoming a Microsoft Certified Information Technology Professionals (MCITP). This course has been designed using the objectives for the Microsoft Certification Exam 70-680 Configuring Microsoft Windows 7. Students will learn to plan and install or upgrade to Windows 7; deploy system images and configure application compatibility; implement IPv4, IPv6, wireless, VPN, mobile, and remote connectivity; set up Internet Explorer® and Windows Firewall; configure Windows BitLocker®, UAC, and access to shared resources; manage devices, drivers, and disks; monitor, update, back up, and performance-tune your system.

**VI. Course Outcomes:** Students will achieve a minimum of 70% proficiency on the following course outcomes:

1. Install various versions of Windows
2. Implement and Conduct Administration of Resources
3. Implement, Manage and Troubleshoot Hardware Devices and Drivers
4. Monitor and Optimize System Performance and Reliability
5. Configure and Troubleshoot the Desktop Environment
6. Implement, Manage, and Troubleshoot Network Protocols and Services
7. Implement, Monitor and Troubleshoot Security

**VII. Outcome Objectives/Measures:**

1. Install various versions of Windows
  - Perform and troubleshoot an attended and an unattended installation
  - Upgrade from a previous version
  - Troubleshoot a failed installation
2. Implement and Conduct Administration of Resources
  - Monitor, manage, and troubleshoot file, folder and shared folder access
  - Configure, manage, and troubleshoot file systems
3. Implement, Manage and Troubleshoot Hardware Devices and Drivers
  - Implement, Manage, and Troubleshoot: disk, display, and I/O devices
  - Configure advanced power management
  - Monitor and configure a multi-processor computer
4. Monitor and Optimize System Performance and Reliability
  - Monitor, optimize and troubleshoot system performance
  - Restore and backup the operating system, system state and user data
5. Configure and Troubleshoot the Desktop Environment
  - Configure and manage user profiles and desktop settings
  - Configure support for multiple locations
  - Manage Applications
6. Implement, Manage, and Troubleshoot Network Protocols and Services
  - Configure and troubleshoot TCP/IP
  - Configure, Manage, and Implement: RIS, Remote Desktop & Remote Assistance

7. Implement, Monitor and Troubleshoot Security
  - EFS
  - Security Configuration & Local Security Policy
  - Internet Explorer Security Settings

**VIII. Textbook & Learning Materials:** LabSim by TestOut for *70-680 Windows 7*, ISBN#978-1-935080-37-4

**IX. Supplies:** Internet access, 3-ring binder, paper, highlighter, and writing utensil

**X. Course Requirements & Policies:**

1. This course uses a LabSim product where the course delivery is offered online. The labs are simulated on-line and quizzes and exams will be delivered online. The class will meet in the classroom and Internet access will be provided for the student's course. The instructor will be available to offer assistance. A student may work ahead of the proposed schedule. A student will need to work on the course outside of the assigned class time in addition to attending the class. Objective Exams need to be taken at the end of each chapter in a proctored environment. If taken in a non-proctored environment no credit will be given (0%). Objective Exams may only be taken once for credit.
2. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the Vice chancellor for academics to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

**XI. Learning Assessments:** Grades will be assigned based on chapter tests, skills tests, labs, quizzes, and assignments. The final exam will be an objective comprehensive test. Tests will have a time limit. Grades will be assigned as follows: **Labs, Exams, and Lesson Assignments 85%; Chapter Tests 15%, and FINAL 5%.**

**XII. Mastery Level:**

Grades will be assigned according to the following scale:

- A = 90 – 100%
- B = 80 – 89%
- C = 70 – 79%
- D = 60 – 69%
- F = Below 60%

# Southern Arkansas University Tech

## NT2114 Supporting Network Infrastructure

### Course Syllabus

#### Fall 2012

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**I. Course Name and Number:** NT2114 Supporting Network Infrastructure

**II. Meeting Schedule:** TR 12:45-2:30

Office Hours: MW 2:30-5:30 & TR 9:00-11:00

**III. Instructional Information:**

Instructor: Jill McCollum

Office: Tech Engineering Bldg #13

Phone: 870-574-4539

e-mail: jmccollu@sautech.edu

**IV. Prerequisites:** NT1114 Supporting Network Servers

**V. Course Description** This is the third of four courses designed to prepare students in becoming a Microsoft Certified Information Technology Professionals (MCITP). This course has been designed using the objectives for the Microsoft Certification Exam 70-642 Configuring Server 2008 Network Infrastructure. Students will learn about configuring IP addressing, routing, name resolution, network access, file and print services, and monitoring and managing a network infrastructure.

**VI. Course Outcomes:** Students will achieve a minimum 70% proficiency on the following course outcomes:

1. Installing, Configuring, Managing, Monitoring, and Troubleshooting IP Addressing in a Windows Network Infrastructure.
2. Installing, Configuring, Managing, Monitoring, and Troubleshooting Name Resolution in a Windows Network Infrastructure.
3. Installing, Configuring, Managing, Monitoring, and Troubleshooting Network Security in a Windows Network Infrastructure.
4. Installing, Configuring, Managing, Monitoring, and Troubleshooting Routing and Remote Access in a Windows Network Infrastructure.
5. Installing, Configuring, Managing, Monitoring, and Troubleshooting Maintaining a Network Infrastructure in a Windows Network Infrastructure.

**Outcome Objectives/Measures:**

1. IP Addressing
  - Configure IP addressing
  - Installing, Configuring, Managing, Monitoring, and Troubleshooting DHCP
2. Name Resolution
  - Installing, Configuring, Managing, Monitoring, and Troubleshooting DNS
  - NetBIOS and WINS
3. Network Security
  - Secure Network Traffic using IPSec
  - IAS and RADIUS
  - Security Templates
4. Routing and Remote Access
  - Enable and Configure Remote Access
  - Configure Routing
5. Maintaining a Network Infrastructure
  - Troubleshooting Methodology
  - Troubleshooting Tools

**VII. Textbook & Learning Materials:** 70-642 *Windows Server 2008 Network Infrastructure LabSim*, TestOut; ISBN# 978-1-935080-24-4

**VIII. Supplies:** Internet Access, 3-ring binder, paper, highlighter, and writing utensil

**IX. Course Requirements & Policies:**

1. This course uses a LabSim product where the course delivery is offered online. The labs are simulated on-line and quizzes and exams will be delivered online. The class will meet in the classroom and Internet access will be provided for the student's course. The instructor will be available to offer assistance. A student may work ahead of the proposed schedule. A student may choose to work on the course outside of the assigned class. Objective Exams need to be in a proctored environment. If taken in a non-proctored environment no credit will be given (0%). Objective Exams may only be taken once for credit.
2. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the Vice chancellor for academics to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

**X. Learning Assessments:** Grades will be assigned based on chapter tests, skills tests, labs, quizzes, and assignments. The final exam will be an objective comprehensive test. Tests will have a time limit. Grades will be assigned as follows: **Labs, Exams, and Lesson Assignments 85%; Chapter Tests 15%, and FINAL 5%.**

**XI. Mastery Level:**

Grades will be assigned according to the following scale:

- A = 90 – 100%
- B = 80 – 89%
- C = 70 – 79%
- D = 60 – 69%
- F = Below 60%

# Southern Arkansas University Tech

## NT1114 Supporting Network Servers

### Course Syllabus

### Spring 2013

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- I. Course Name and Number:** NT1114 – Supporting Network Servers
  - II. Meeting Schedule:** TR 8:30-10:15
  - III. Instructional Information:**

Instructor: Jill McCollum	Office: Tech Engineering Bldg. #13
Phone: (870) 574-4539	E-mail: <a href="mailto:jmccollu@sautech.edu">jmccollu@sautech.edu</a>
  - IV. Prerequisites:** NT1014 – Supporting Network Clients
  - V. Course Description** This is the second of four courses designed to prepare students in becoming a Microsoft Certified Information Technology Professionals (MCITP). This course has been designed using the objectives for the Microsoft Certification

Exam 70-646 Windows Server 2008 Administrator. Students will learn to plan for server deployment and management, monitor and maintain the server, plan application and data provisioning, and dealing with business continuity and availability.

**VI. Course Outcomes:** Students will achieve a minimum of 70% proficiency on the following course outcomes:

1. Managing and Maintaining Physical and Logical Devices
2. Managing Users, Computers, and Groups
3. Managing and Maintaining Access to Resources
4. Managing and Maintaining a Server Environment
5. Managing and Implementing Disaster Recovery

**VII. Outcome Objectives/Measures:**

1. Managing and Maintaining Physical and Logical Devices
  - Manage Hardware Devices
  - Manage Disks and Data Storage
2. Managing Users, Computers, and Groups
  - Creating and Managing User Accounts
  - Implementing and Managing Group and Computer Accounts
3. Managing and Maintaining Access to Resources
  - Managing File Access
  - Advanced File System Management
4. Managing and Maintaining a Server Environment
  - Server Administration
  - Monitoring Server Performance
  - Server Security Features
  - Managing Printers and Web Resources
5. Managing and Implementing Disaster Recovery
  - Managing and Implementing Backups
  - Managing and Implementing Disaster Recovery

**VIII. Textbook & Learning Materials:** 70-646 *Windows Server 2008 Administrator LabSim*, TestOut; ISBN# 978-1-935080-26-8

**IX. Supplies:** LabSim, 3-ring binder, paper, highlighter, and writing utensil

**X. Course Requirements & Policies:**

1. This course uses a LabSim product where the course delivery is offered online. The labs are simulated on-line and quizzes and exams will be delivered online. The class will meet in the classroom and Internet access will be provided for the student's course. The instructor will be available to offer assistance. A student may work ahead of the proposed schedule. The student will need to work on the course outside of the assigned class time in order to make satisfactory progress following the proposed schedule. Objective Exams need to be taken in a proctored

environment. If taken in a non-proctored environment no credit will be given (0%). Objective Exams may only be taken once for credit.

2. In order to pass this course and eventually the 70-646 exam, you **MUST** read the curriculum. Students are expected to attend **ALL** classes. The instructor must be notified of a legitimate excuse and in advance when possible. Discuss any makeup work immediately upon your return or it will not be accepted. Late work may be accepted late for a letter grade deduction. Two unexcused absences could cause you to be dropped from the class.
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- XII. Mastery Level:**  
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  - C = 70 – 79%
  - D = 60 – 69%
  - F = Below 60%

**Southern Arkansas University Tech**  
**Basic PC Troubleshooting**  
**EE2804**  
**Course Syllabus**

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**I. Course Name and Number:** EE2804 Basic PC Troubleshooting, 4 Credits

**II. Meeting Schedule:** T R 10:30 am – 12:15 pm TE213

**III. Instructional Information:**

Name: Robert Brown  
Phone: (870) 574-4581

Office: Building TE – Office 12  
Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)  
Office Hours: TBA

**IV. Prerequisite:** None

**V. Course Description:** This is the first of two (2) courses designed using classroom and hands-on instruction in installing, building, upgrading, repairing, configuring troubleshooting, optimizing, diagnosing and performing preventative maintenance of

basic personal computer hardware and software in preparation for A+ certification and base knowledge for an Enterprise Technician, IT Administrator, field service technician as well as PC technician. Prerequisite: None.

**VI. Course Outcomes:** Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

1. Hardware
2. Troubleshooting, Repair & Maintenance
3. Operational Procedure

**Outcome Objectives/Measures:**

1. Hardware
  - Categorize storage devices and backup media
  - Explain motherboard components, types & features
  - Classify power supplies
  - Explain the purpose and characteristics of CPUs and their features
  - Explain cooling methods and devices
  - Compare and contrast memory types, characteristics & their purpose
  - Distinguish between the different display devices and their characteristics
  - Install and configure peripherals and input devices
  - Summarize the function and type of adapter cards
  - Install, configure, and optimize laptop components and features
2. Troubleshooting, Repair & Maintenance
  - Explain the troubleshooting theory
  - Explain and interpret common hardware and operating system symptoms and their causes
  - Determine the troubleshooting methods and tools for printers
  - Explain and interpret common laptop issues and determine the appropriate basic troubleshooting methods
3. Operational Procedure
  - Outline the purpose of appropriate safety and environmental procedures
  - Demonstrate the appropriate use of communication skills and professionalism in the workplace

**VII. Textbook & Learning Materials:**

TBA

**VIII. Supplies:**

- a. 1” 3 ring Presentation Binder (see Instructor)

- b. CD or DVD Rewritable Media or Flash Drive
- c. 2 different colored Highlighters

**IX. Course Requirements & Policies:**

1. Classes will consist of lecture, hands-on assignments and research
2. Safety is first priority!
3. No horseplay!
4. The labs must be kept clean
5. All electronic devices are to be turned off before leaving them
6. Unexcused absence will result in a Zero for class attendance and any work missed
7. Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
8. Dishonesty will not be tolerated
9. Abuse of computer equipment and building facilities will not be tolerated
10. Internet usage will be monitored
11. All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous and sociable) at all times in the classroom.
12. Students displaying inappropriate behavior will be required to leave class.
13. Repeated objectionable behavior is grounds for permanent dismissal.
14. Office hours will be posted for additional instruction
15. Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students.

**X. Learning Assessments: Based on a 1500 Point System, students must obtain 1500 points minimum (70% or higher) to receive class credit.**

1. Out of the **1500 point total** of combined exams and Labs, Midterm and Final exam, and class participation, students must accumulate at least **1500 points** to meet the minimum **70%** to be awarded class credit
2. Tests may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
3. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor. It is your responsibility to get the materials missed - otherwise the recorded zero will remain as your grade.

**XI. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

## **XII. Office Policy:**

I will do everything within my power to always be available during my posted office hours. I am easily available with a prior appointment by calling 574-4581 and ask to schedule a time that suits your convenience. At other times you are welcome to contact me by email at [IteachIT@sbcglobal.net](mailto:IteachIT@sbcglobal.net) or [rbrown@sautech.edu](mailto:rbrown@sautech.edu). Please feel free to talk to me about any issue relating to the course. Please ask if this is a good time and do not take it personally if I am busy at that moment. I will make time for you always and depending upon your circumstance, I can juggle my schedule for you. You and your education are very important to me as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, or email me.

**Southern Arkansas University Tech**  
**A+ Practical Application (220-702)**  
**CS2094**  
**Course Syllabus**

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**SAU Tech Mission Statement**

Southern Arkansas University Tech is a comprehensive, two-year, public college committed to providing quality educational programs to meet the needs of its service area. Within its resources, the college accomplishes its mission through technical career programs, transfer curricula, continuing education, developmental education, and administrative, student, and Community services.

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**SAU Tech Assessment Philosophy**

Southern Arkansas University Tech has developed a program to assess the learning outcomes of its students to assure that the College is achieving its mission. The Assessment program is designed to measure the level of skills and competencies gained by students at the program and course levels as well as within the General Education curriculum for all Associate Degree students. Assessment activities are performed in a number of ways including placement exams prior to enrollment, program level goals and objectives, and classroom assessment techniques. Faculty identifies desired student learning outcomes on the program and classroom level and then assesses through various methodologies how well those outcomes have been achieved. The college uses the data obtained from assessment measures to improve student academic achievement and the instructional methodologies delivered by the institution.

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**SAU Tech ADA Policy**

Southern Arkansas University Tech recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements necessary for an A.A., A.S., or A.A.S. degree or certificate programs in the same manner expected of nondisabled students. In compliance with Section 504, of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, qualified students with disabilities may request that appropriate course accommodations be considered. Students are encouraged to meet with Disability Services to develop a plan for their academic accommodations. Requests for accommodations must be made within (2) weeks of the start of each semester.

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**I. Course Name and Number:** CS2094 A+ Practical Application (220-702), 4 Credits

**II. Meeting Schedule:** M W 10:30 am - 12:15 pm TE213

**III. Instructional Information:**

Name: Robert Brown  
Phone: (870) 574-4581  
Cell Phone: (870) 310-5770

Office: Building TE – Office 1  
Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)  
Office Hours: TBA

**IV. Prerequisite:** This course, A+ Practical Application, is targeted for individuals who work or intend to work in a mobile or corporate technical environment with a high level of face-to-face client interaction. Job titles in some organizations, which are descriptive of the role of this individual, may be Enterprise Technician, IT Administrator, Field Service Technician, PC Technician, etc... Ideally, the CompTIA A+ 220-702 candidate has already passed the CompTIA A+ Essentials examination (220-701). Individuals in some non-technical roles such as student, sales personnel, or small business office managers may also find the validation of skills associated with the CompTIA A+ credential to be valuable. It is designed to measure a candidate's knowledge as a prerequisite to A+ Certification. You can obtain this level of skill and knowledge by taking **CS2084** A+ Essentials. **PREREQUISITE: CS2084**

**V. Course Description:**

Students will build and hone their skills and knowledge in becoming subject matter experts. Students will be challenged to industry standards in a body of knowledge that has been identified and accepted as the baseline for an entry level IT professional. This is the first exam, which measures necessary competencies of IT field and lab experience. This course is also the main course students must take to prepare for the CompTIA A+ Practical Application examination (**220-702**). In this course, you will build on your knowledge and professional experience of how to install, configure, upgrade, maintain, and troubleshoot personal computer systems, components, and peripherals; to connect computers to networks; and to provide service to clients with personal computer equipment service needs.

**VI. Course Outcomes:** Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

- a. Hardware
- b. Operating Systems
- c. Network
- d. IT Security

**VII. Outcome Objectives/Measures:**

- i. Hardware
  - 1. Given a scenario and hands on labs, install, configure, and maintain personal computer components
  - 2. Given a scenario and hands on labs, detect problems, troubleshoot and repair/replace personal computer components
  - 3. Given a scenario and hands on labs, install, configure, detect problems, troubleshoot and repair/replace laptop components
  - 4. Given a scenario and hands on labs, detect and resolve common printer issues
- ii. Operating System
  - 1. Select the appropriate commands and options to troubleshoot and resolve problems

2. Differentiate between Windows Operating System directory structures
  3. Given a scenario, select and use system utilities / tools and evaluate the results
  4. Evaluate and resolve common issues
- iii. Networking
1. Troubleshoot client-side connectivity issues using appropriate tools
  2. Install and configure a small office home office (SOHO) network
- iv. IT Security
1. Given a scenario, prevent, troubleshoot and remove viruses and malware
  2. Implement security and troubleshoot common issues

### **VIII. Textbook & Learning Materials:**

LabSIM A+ Practical Applications 220-702 ISBN: 978-1-935080-36-7

### **IX. Supplies: TBD**

### **X. Course Requirements & Policies:**

- Classes will consist of lecture, hands-on assignments and research
- Safety is first priority
- No horseplay
- The labs must be kept clean
- All electronic devices are to be turned off before leaving them
- Unexcused absence will result in a Zero for class attendance and any work missed
- Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
- Dishonesty will not be tolerated
- Abuse of computer equipment and building facilities will not be tolerated
- Internet usage will be monitored
- All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous, and sociable) at all times in the classroom
- Students displaying inappropriate behavior will be required to leave class
- Repeated objectionable behavior is grounds for permanent dismissal
- Office hours will be posted for additional instruction
- Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students

### **XI. Learning Assessments: Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

4. There will several objective exams
5. Hands-On Lab
6. Student Participation
7. One Final
8. Out of the **1500 point total** of combined exams, Hands-On Lab, one Final exam, and student participation, students must accumulate at least **1050 points** to meet the minimum **70%** to be awarded class credit
9. Tests may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
10. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor. It is your responsibility to get the materials missed - otherwise the recorded zero will remain as your grade.

## **XII. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

## **XIII. Office Policy:**

I will do everything within my power to always be available during my posted office hours. As a faculty member with other teaching responsibilities who is trying to do research and be a good citizen, I am juggling many responsibilities. I am easily available with a prior appointment by calling 574-4581 and ask to schedule a time that suits your convenience. At other times, contact me by email at [rbrown@sautech.edu](mailto:rbrown@sautech.edu) . Please feel free to talk to me about any issue relating to the course. If by chance we should meet in the hall or on campus, I am sometimes harried with other commitments, please ask if this is a good time, and do not take it personally if I am busy at that moment. I will make time for you always and depending upon your circumstance, I can juggle my schedule for you. You and your education are very important to me, as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, email me, or if necessary call me at home.

# Southern Arkansas University Tech

## Security+ NT2204

### Course Syllabus

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#### **SAU Tech Mission Statement**

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#### **SAU Tech Assessment Philosophy**

Southern Arkansas University Tech has developed a program to assess the learning outcomes of its students to assure that the College is achieving its mission. The Assessment Program is designed to measure the level of skills and competencies gained by students at the program and course levels as well as within the General Education curriculum for all Associate Degree students. Assessment activities are performed in a number of ways including placement exams prior to enrollment, program level goals and objectives, and classroom assessment techniques. Faculty identifies desired student learning outcomes on the program and classroom level and then assesses through various methodologies how well those outcomes have been achieved. The college uses the data obtained from assessment measures to improve student academic achievement and the instructional methodologies delivered by the institution.

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#### **SAU Tech ADA Policy**

SAU Tech recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements necessary for an A.A., A.S., or A.A.S. degree or certificate programs in the same manner expected of nondisabled students. In compliance with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, qualified students with disabilities may request that appropriate course accommodations be considered. Students are encouraged to meet with Disability Services to develop a plan for their academic accommodations. Requests for accommodations must be made within two (2) weeks of the start of each semester.

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**I. Course Name and Number:** NT 2204-01 Introduction to Security, 4 Credits

**II. Meeting Schedule:** MW 12:45am – 2:30pm TE213

**III. Instructional Information:**

Name: Robert Brown  
Phone: (870) 574-4581  
**Office Hours:** TBA

Office: Building TE – Office 12  
Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)

**IV. Prerequisite:** None

**V. Course Description:** This course has been designed using CompTIA Course approved materials in preparation for the CompTIA Security+ Exam which satisfies

one of Microsoft's Security Specialization requirements. Students will learn General Security Concepts – access controls; authentication methods; risk of services and protocols; vulnerabilities of attacks and malicious code; social engineering; and auditing; Communication Security – recognize, understand and administer remote access technologies; email, Internet, directory security concepts; file transfer protocol and wireless technology concepts; Infrastructure Security – hardware and media security issues; security topologies; differentiate, conceptualize, implement and configure intrusion detection systems; and security baseline; Basic Cryptography – cryptographic algorithms and security concepts; PKI concepts, management and lifecycles; and Operational/Organizational Security – physical security, disaster recovery, business continuity, policies and procedures, privilege management, forensics, and risk identification and management. Prerequisite: NT 1114.

**VI. Course Outcomes:** Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

4. Systems Security
5. Network Infrastructure
6. Access Control
7. Assessment and Audits
8. Cryptography
9. Organizational Security

**Outcome Objectives/Measures:**

1. Systems Security
  - Differentiate among various systems security threats
  - Explain the security risks pertaining to system hardware and peripherals.
  - Implement OS hardening practices and procedures to achieve workstation and server security.
  - Carry out the appropriate procedures to establish application security
  - Implement security applications
2. Network Infrastructure
  - Differentiate between the different ports & protocols, their respective threats and mitigation techniques.
  - Distinguish between network design elements and components
  - Determine the appropriate use of network security tools to facilitate network security
  - Apply the appropriate network tools to facilitate network security
  - Explain the vulnerabilities and mitigations associated with network devices
  - Explain the vulnerabilities and mitigations associated with various transmission media
3. Access Control
  - Identify and apply industry best practices for access control methods

- Explain common access control models and the differences between each
  - Organize users and computers into appropriate security groups and roles while distinguishing between appropriate rights and privileges
  - Apply appropriate security controls to file and print resources
  - Compare and implement logical access control methods
  - Summarize the various authentication models and identify the components of each
  - Deploy various authentication models and identify the components of each
  - Explain the difference between identification and authentication
  - Explain and apply physical access security methods
4. Assessment and Audits
- Conduct risk assessments and implement risk mitigation
  - Carry out vulnerability assessments using common tools
  - Within the realm of vulnerability assessments, explain the proper use of penetration testing verses vulnerability scanning
  - Use monitoring tools on systems and networks and detect security-related anomalies
  - Compare and contrast various types of monitoring methodologies
  - Execute proper logging procedures and evaluate the results
  - Conduct periodic audits of system security settings
5. Cryptography
- Explain general cryptography concepts
  - Explain basic hashing concepts and map various algorithms to appropriate applications
  - Explain basic encryption concepts and map various algorithms to appropriate applications
  - Explain and implement protocols
  - Explain core concepts of public key cryptography
  - Implement PKI and certificate management
6. Organizational Security
- Explain redundancy planning and its components
  - Implement disaster recovery procedures
  - Differentiate between and execute appropriate incident response procedures
  - Identify and explain applicable legislation and organizational policies
  - Explain the importance of environmental controls
  - Explain the concept of and how to reduce the risks of social engineering

## **VII. Textbook & Learning Materials:**

TBA

## **VIII. Supplies:**

TBA

## **IX. Course Requirements & Policies:**

16. Classes will consist of lecture, hands-on assignments and research
17. Safety is first priority!
18. No horseplay!
19. The labs must be kept clean
20. All electronic devices are to be turned off before leaving them
21. Unexcused absence will result in a Zero for class attendance and any work missed
22. Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
23. Dishonesty will not be tolerated
24. Abuse of computer equipment and building facilities will not be tolerated
25. Internet usage will be monitored
26. All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous, and sociable) at all times in the classroom.
27. Students displaying inappropriate behavior will be required to leave class.
28. Repeated objectionable behavior is grounds for permanent dismissal.
29. Office hours will be posted for additional instruction
30. Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students.

## **X. TestOut LABSIM Policy:**

This course uses a LabSim product where the course delivery is offered online. The labs are simulated on-line and quizzes and exams will be delivered online. The class will meet in the classroom and Internet access will be provided for the student's course. The instructor will be available to offer assistance. A student may work ahead of the proposed schedule. A student may choose to work on the course outside of the assigned class time in lieu of or in addition to attending the class; providing satisfactory progress is being made in the course following the proposed schedule. Objective Exams need to be taken at the end of each chapter in a proctored environment. If taken in a non-proctored environment no credit will be given (0%). Objective Exams may only be taken once for credit.

**XI. Learning Assessments: Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

11. Out of the **1500 point total** of combined exams and Labs, Midterm and Final exam, and class participation, students must accumulate at least **1050 points** to meet the minimum **70%** to be awarded class credit
12. Tests may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
13. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor. It is your responsibility to get the materials missed - otherwise the recorded zero will remain as your grade.

**XII. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

**XIII. Office Policy:**

I will do everything within my power to be available during my posted office hours. As a faculty member with other teaching responsibilities, I am juggling many responsibilities. An appointment may be scheduled by calling 574-4581. You are welcome to call me at home, 870-310-5770, or contact me by email at [rbrown@sautech.edu](mailto:rbrown@sautech.edu) or [ITeachIT@sbcglobal.net](mailto:ITeachIT@sbcglobal.net) . Please feel free to talk to me about any issue relating to the course. If by chance we should meet in the hall or on campus, I am sometimes harried with other commitments, please do not take it personally if I am busy at that moment. I will make time for you and depending upon your circumstance I can juggle my schedule for you. You and your education are very important to me as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, email me or if necessary call me at home.

# Southern Arkansas University Tech

## A+ Essentials

### CS2084

### Course Syllabus

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#### **SAU Tech Mission Statement**

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#### **SAU Tech Assessment Philosophy**

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#### **SAU Tech ADA Policy**

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- I. Course Name and Number:** CS2084 A+ Essentials, 4 Credits
  
- II. Meeting Schedule:**                    MW                    10:30 am – 12:15 pm                    TE213
  
- III. Instructional Information:**

Name: Robert Brown  
Phone: (870) 574-4581

Office: Building TE – Office 1  
Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)  
Office Hours: TBA

**IV. Prerequisite:** This course, A+ Essentials, is for the student with Hands-on experience or equivalent knowledge including installing, building, upgrading, repairing, configuring, troubleshooting, optimizing, diagnosing and performing preventative maintenance of basic personal computer hardware and software. It is designed to measure a candidate's knowledge as a prerequisite to A+ Certification. You can obtain this level of skills and knowledge by taking any of the following; **MIS1003** Introduction to Computers, **NT1014** Supporting Network Clients, **NT1024** Supporting Network Servers and **EE2804** Basic Troubleshooting (**preferably**).

**V. Course Description:**

Students will build and hone their skills and knowledge in becoming subject matter experts. Students will be challenged to industry standards in a body of knowledge that has been identified and accepted as the baseline for an entry level IT professional. This is the first exam which measures necessary competencies of IT field and lab experience. This course is also the main course students must take to prepare for the CompTIA A+ Essentials examination. In this course, you will build on your knowledge and professional experience of how to install, configure, upgrade, maintain, and troubleshoot personal computer systems, components, and peripherals; to connect computers to networks; and to provide service to clients with personal computer equipment service needs.

**VI. Course Outcomes:** Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

1. Hardware
2. Troubleshooting, Repair & Maintenance
3. Operating Systems & Software
4. Networking
5. Security
6. Operational Procedures

**Outcome Objectives/Measures:**

1. Hardware
  - a. Categorize storage devices and backup media
  - b. Explain motherboard components, types and features
  - c. Classify power supplies types and characteristics
  - d. Explain the purpose and characteristics of CPUs and their features
  - e. Explain cooling methods and devices
  - f. Compare and contrast memory types, characteristics and their purpose
  - g. Distinguish between the different display devices and their characteristics
  - h. Install and configure peripherals and input devices
  - i. Summarize the function and types of adapter cards
  - j. Install, configure and optimize laptop components and features

- k. Install and configure printers
- 2. Troubleshooting, Repair & Maintenance
  - a. explain the troubleshooting theory
  - b. explain and interpret common hardware and operating system symptoms and their causes
  - c. determine the troubleshooting methods and tools for printers
  - d. explain and interpret common laptop issues and determine the appropriate basic troubleshooting method
  - e. integrate common preventative maintenance techniques
- 3. Operating Systems & Software
  - a. Compare and contrast the different Windows Operating Systems and their features
  - b. demonstrate proper use of user interfaces
  - c. Explain the process and steps to install and configure the Windows OS
  - d. Explain the basics of boot sequences, methods and startup utilities
- 4. Networking
  - a. Summarize the basics of networking fundamentals, including technologies, devices and protocols
  - b. Categorize network cables and connectors and their implementations
  - c. Compare and contrast the different network types
- 5. Security
  - a. Explain the basic principles of security concepts and technologies
  - b. Summarize the following security features
- 6. Operational Procedures
  - a. Outline the purpose of appropriate safety and environmental procedures and given a scenario apply them
  - b. Given a scenario, demonstrate the appropriate use of communication skills and professionalism in the workplace

**VII. Textbook & Learning Materials:**

TBA

**VIII. Supplies:**

TBA

**IX. Course Requirements & Policies:**

- 31. Classes will consist of lecture, LAB Hands-On Assignments and research
- 32. Safety is first priority!
- 33. No horseplay!
- 34. The labs must be kept clean
- 35. All electronic devices are to be turned off before leaving them
- 36. Unexcused absence will result in a Zero for class attendance and any work missed

37. Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
38. Dishonesty will not be tolerated – cheating or plagiarism will receive Zero's.
39. Abuse of computer equipment and building facilities will not be tolerated
40. Internet usage will be monitored
41. All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous, and sociable) at all times in the classroom.
42. Students displaying inappropriate behavior will be required to leave class.
43. Repeated objectionable behavior is grounds for permanent dismissal.
44. Office hours will be posted for additional instruction
45. Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students.

**X. Test Out LABSIM Policy:**

This course uses a LabSim product where the course delivery is offered online. The labs are simulated on-line and quizzes and exams will be delivered online. The class will meet in the classroom and Internet access will be provided for the student's course. The instructor will be available to offer assistance. A student may work ahead of the proposed schedule. A student may choose to work on the course outside of the assigned class time in lieu of or in addition to attending the class; providing satisfactory progress is being made in the course following the proposed schedule. Objective Exams need to be taken at the end of each chapter in a proctored environment. If taken in a non-proctored environment no credit will be given (0%). Objective Exams may only be taken once for credit.

**XI. Learning Assessments: Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

1. Out of the 1500 point total of combined exams, FINAL Exam, daily participation, students must accumulate at least 1050 points to meet the minimum 70% to be awarded class credit
2. Tests and quizzes may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
3. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor

**XII. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

### **XIII. Office Policy:**

I will do everything within my power to always be available during my posted office hours. As a faculty member with other teaching responsibilities who is trying to do research and be a good citizen, I am juggling many responsibilities. I am easily available with a prior appointment by calling 574-4581 and ask to schedule a time that suits your convenience (if I am available). At other times, you are welcome to contact me by email at [rbrown@sautech.edu](mailto:rbrown@sautech.edu) & [ITeachIT@sbcglobal.net](mailto:ITeachIT@sbcglobal.net) . Please feel free to talk to me about any issue relating to the course. If by chance we should meet in the hall or on campus, I am sometimes harried with other commitments, please ask if this is a good time and do not take it personally if I am busy at that moment. I will make time for you always and depending upon your circumstance I can juggle my schedule for you. You and your education are very important to me as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, email me or if necessary call me at home.

# Southern Arkansas University Tech NETWORK+ NT2444 Course Syllabus

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## **SAU Tech Mission Statement**

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## **SAU Tech Assessment Philosophy**

Southern Arkansas University Tech has developed a program to assess the learning outcomes of its students to assure that the College is achieving its mission. The Assessment Program is designed to measure the level of skills and competencies gained by students at the program and course levels as well as within the General Education curriculum for all Associate Degree students. Assessment activities are performed in a number of ways including placement exams prior to enrollment, program level goals and objectives, and classroom assessment techniques. Faculty identifies desired student learning outcomes on the program and classroom level and then assesses through various methodologies how well those outcomes have been achieved. The college uses the data obtained from assessment measures to improve student academic achievement and the instructional methodologies delivered by the institution.

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## **SAU Tech ADA Policy**

SAU Tech recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements necessary for an A.A., A.S., or A.A.S. degree or certificate programs in the same manner expected of nondisabled students. In compliance with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, qualified students with disabilities may request that appropriate course accommodations be considered. Students are encouraged to meet with Disability Services to develop a plan for their academic accommodations. Requests for accommodations must be made within two (2) weeks of the start of each semester.

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**I. Course Name and Number:** CS2444-01 NETWORK+, 4 Credits

**II. Meeting Schedule:** TR 8:30 am - 10:15 am TE213

### **III. Instructional Information:**

Name: Robert Brown  
Phone: (870) 574-4581

Office: Building TE – Office 12  
Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)  
Office Hours: TBA

**IV. Prerequisite:** NONE

V. **Course Description:** Knowing how to install, configure, and troubleshoot a computer network is a highly marketable and exciting skill. This course first introduces the fundamental building blocks that form a modern network, such as protocols, topologies, hardware, and network operating systems. It then provides in-depth coverage of the most important concepts in contemporary networking, such as TCP/IP, Ethernet, wireless transmission, and security. The course will prepare you to select the best network design, hardware, and software for your environment. You will also have the skills to build a network from scratch and maintain, upgrade, and troubleshoot an existing network. Finally, you will be well prepared to pass CompTIA's (the Computing Technology Industry Association's) Network+ certification exam. **Prerequisite: NONE**

VI. **Course Outcomes:** Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

1. Network Technologies
2. Network Media and Topologies
3. Network Devices
4. Network Management
5. Network Tools
6. Network Security

**Outcome Objectives/Measures:**

1. Network Technologies
  - a. Explain the function of common networking protocols
  - b. Identify commonly used TDP and UDP default ports
  - c. Identify address formats
  - d. Evaluate
2. Network Media and Topologies
  - a. Categorize standard cable types and their properties
  - b. Identify common connector types
  - c. Identify common physical network topologies
  - d. Differentiate and implement appropriate wiring standards
  - e. Categorize WAN technology types and properties
  - f. Explain common logical network topologies and their characteristics
  - g. Install components of wiring distribution
3. Network Devices
  - a. Install, configure and differentiate between common network devices
  - b. Identify the functions of specialized network devices
  - c. Explain the advanced features of a switch
  - d. Implement a basic wireless network
4. Network Management
  - a. Explain the function of each layer of the OSI model
  - b. Identify types of configuration management documentation
  - c. Evaluate the network based on configuration management documentation

- d. Conduct network monitoring to identify performance and connectivity issues
  - e. Explain different methods and rationales for network performance optimization
  - f. Implement network troubleshooting methodology
  - g. Troubleshoot common connectivity issues and select an appropriate solution
5. Network Tools
- a. Select the appropriate command line interface tool and interpret the output to verify functionality
  - b. Explain the purpose of network scanners
  - c. Utilize the appropriate hardware tools
6. Network Security
- a. Explain the function of hardware and software security devices
  - b. Explain the common features of a firewall
  - c. Explain the methods of network access security
  - d. Explain the methods of network access
  - e. Explain the issues that affect device security
  - f. Identify common security threats and mitigation techniques

**VII. Textbook & Learning Materials:** Bundle: Network+ Guide to Networks, 5th + LabSim. ISBN-10: 1435479106 | ISBN-13: 9781435479104

**VIII. Supplies:** Notebook – Required, Highlighters (red/pink & yellow) - Required

**IX. Course Requirements & Policies:**

- 46. Classes will consist of lecture, hands-on assignments and research
- 47. Safety is first priority!
- 48. No horseplay!
- 49. The labs must be kept clean
- 50. All electronic devices are to be turned off before leaving them
- 51. Unexcused absence will result in a Zero for class attendance and any work missed
- 52. Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
- 53. Dishonesty will not be tolerated – cheating or plagiarism will receive Zero's.
- 54. Abuse of computer equipment and building facilities will not be tolerated
- 55. Internet usage will be monitored
- 56. All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous, and sociable) at all times in the classroom.
- 57. Students displaying inappropriate behavior will be required to leave class.
- 58. Repeated objectionable behavior is grounds for permanent dismissal.
- 59. Office hours will be posted for additional instruction
- 60. Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students.

**X. Learning Assessments: Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

14. Out of the **1500 point total** of combined exams, FINAL Exam, daily participation, students must accumulate at least **1050 points** to meet the minimum **70%** to be awarded class credit
15. Tests and quizzes may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
16. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor

**XI. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

**XII. Office Policy:**

I will do everything within my power to always be available during my posted office hours. I am easily available with a prior appointment by calling 574-4581 and ask to schedule a time that suits your convenience. At other times you are welcome to contact me by email at [IteachIT@sbcglobal.net](mailto:IteachIT@sbcglobal.net) or [rbrown@sautech.edu](mailto:rbrown@sautech.edu). Please feel free to talk to me about any issue relating to the course. Please ask if this is a good time and do not take it personally if I am busy at that moment. I will make time for you always and depending upon your circumstance I can juggle my schedule for you. You and your education are very important to me as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, email me or if really necessary call me at home.

**Southern Arkansas University Tech**  
**A+ Practical Application (220-702)**  
**CS2094**  
**Course Syllabus**

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**SAU Tech Mission Statement**

Southern Arkansas University Tech is a comprehensive, two-year, public college committed to providing quality educational programs to meet the needs of its service area. Within its resources, the college accomplishes its mission through technical career programs, transfer curricula, continuing education, developmental education, and administrative, student, and Community services.

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**SAU Tech Assessment Philosophy**

Southern Arkansas University Tech has developed a program to assess the learning outcomes of its students to assure that the College is achieving its mission. The Assessment program is designed to measure the level of skills and competencies gained by students at the program and course levels as well as within the General Education curriculum for all Associate Degree students. Assessment activities are performed in a number of ways including placement exams prior to enrollment, program level goals and objectives, and classroom assessment techniques. Faculty identifies desired student learning outcomes on the program and classroom level and then assesses through various methodologies how well those outcomes have been achieved. The college uses the data obtained from assessment measures to improve student academic achievement and the instructional methodologies delivered by the institution.

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**SAU Tech ADA Policy**

Southern Arkansas University Tech recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements necessary for an A.A., A.S., or A.A.S. degree or certificate programs in the same manner expected of nondisabled students. In compliance with Section 504, of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, qualified students with disabilities may request that appropriate course accommodations be considered. Students are encouraged to meet with Disability Services to develop a plan for their academic accommodations. Requests for accommodations must be made within (2) weeks of the start of each semester.

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**I. Course Name and Number:** CS2094 A+ Practical Application (220-702), 4 Credits

**II. Meeting Schedule:** M W 10:30 am - 12:15 pm TE213

**III. Instructional Information:**

Name: Robert Brown  
Phone: (870) 574-4581  
Cell Phone: (870) 310-5770

Office: Building TE – Office 1  
Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)  
Office Hours: TBA

**IV. Prerequisite:** This course, A+ Practical Application, is targeted for individuals who work or intend to work in a mobile or corporate technical environment with a high level of face-to-face client interaction. Job titles in some organizations, which are descriptive of the role of this individual, may be Enterprise Technician, IT Administrator, Field Service Technician, PC Technician, etc... Ideally, the CompTIA A+ 220-702 candidate has already passed the CompTIA A+ Essentials examination (220-701). Individuals in some non-technical roles such as student, sales personnel, or small business office managers may also find the validation of skills associated with the CompTIA A+ credential to be valuable. It is designed to measure a candidate's knowledge as a prerequisite to A+ Certification. You can obtain this level of skill and knowledge by taking **CS2084 A+ Essentials. PREREQUISITE: CS2084**

**V. Course Description:**

Students will build and hone their skills and knowledge in becoming subject matter experts. Students will be challenged to industry standards in a body of knowledge that has been identified and accepted as the baseline for an entry level IT professional. This is the first exam, which measures necessary competencies of IT field and lab experience. This course is also the main course students must take to prepare for the CompTIA A+ Practical Application examination (**220-702**). In this course, you will build on your knowledge and professional experience of how to install, configure, upgrade, maintain, and troubleshoot personal computer systems, components, and peripherals; to connect computers to networks; and to provide service to clients with personal computer equipment service needs.

**VI. Course Outcomes:** Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

- e. Hardware
- f. Operating Systems
- g. Network
- h. IT Security

**VII. Outcome Objectives/Measures:**

- i. Hardware
  - 1. Given a scenario and hands on labs, install, configure, and maintain personal computer components
  - 2. Given a scenario and hands on labs, detect problems, troubleshoot and repair/replace personal computer components
  - 3. Given a scenario and hands on labs, install, configure, detect problems, troubleshoot and repair/replace laptop components
  - 4. Given a scenario and hands on labs, detect and resolve common printer issues
- ii. Operating System
  - 1. Select the appropriate commands and options to troubleshoot and resolve problems

2. Differentiate between Windows Operating System directory structures
  3. Given a scenario, select and use system utilities / tools and evaluate the results
  4. Evaluate and resolve common issues
- iii. Networking
1. Troubleshoot client-side connectivity issues using appropriate tools
  2. Install and configure a small office home office (SOHO) network
- iv. IT Security
1. Given a scenario, prevent, troubleshoot and remove viruses and malware
  2. Implement security and troubleshoot common issues

### **VIII. Textbook & Learning Materials:**

LabSIM A+ Practical Applications 220-702 ISBN: 978-1-935080-36-7

### **IX. Supplies: TBD**

### **X. Course Requirements & Policies:**

- Classes will consist of lecture, hands-on assignments and research
- Safety is first priority
- No horseplay
- The labs must be kept clean
- All electronic devices are to be turned off before leaving them
- Unexcused absence will result in a Zero for class attendance and any work missed
- Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
- Dishonesty will not be tolerated
- Abuse of computer equipment and building facilities will not be tolerated
- Internet usage will be monitored
- All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous, and sociable) at all times in the classroom
- Students displaying inappropriate behavior will be required to leave class
- Repeated objectionable behavior is grounds for permanent dismissal
- Office hours will be posted for additional instruction
- Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students

### **XI. Learning Assessments: Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

17. There will several objective exams
18. Hands-On Lab
19. Student Participation
20. One Final
21. Out of the **1500 point total** of combined exams, Hands-On Lab, one Final exam, and student participation, students must accumulate at least **1050 points** to meet the minimum **70%** to be awarded class credit
22. Tests may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
23. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor. It is your responsibility to get the materials missed - otherwise the recorded zero will remain as your grade.

## **XII. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

## **XIII. Office Policy:**

I will do everything within my power to always be available during my posted office hours. As a faculty member with other teaching responsibilities who is trying to do research and be a good citizen, I am juggling many responsibilities. I am easily available with a prior appointment by calling 574-4581 and ask to schedule a time that suits your convenience. At other times, contact me by email at [rbrown@sautech.edu](mailto:rbrown@sautech.edu) . Please feel free to talk to me about any issue relating to the course. If by chance we should meet in the hall or on campus, I am sometimes harried with other commitments, please ask if this is a good time, and do not take it personally if I am busy at that moment. I will make time for you always and depending upon your circumstance, I can juggle my schedule for you. You and your education are very important to me, as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, email me, or if necessary call me at home.

**Southern Arkansas University Tech  
Enterprise Security (SSCP)  
CS2014  
Course Syllabus**

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**I. Course Name and Number:** CS2014 Enterprise Security (SSCP) 4 Credits

**II. Meeting Schedule:** T R 08:30am – 10:15am  
TE213

**III. Instructional Information:**

Name: Robert Brown  
Phone: (870) 574-4581  
Cell Phone:

Office: Building TE – Office 12  
Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)  
Office Hours: TBA

**IV. Prerequisite: NT2204**

**V. Course Description:** Enterprise Security curricula strictly follows ISC2's (Information Systems Security Certification Consortium, Inc.) official training curriculum. The ISC2 SSCP (System Security Certified Practitioner) certification validates the ability of security professionals such as Network Security Engineers, Security Systems Analysts, and Security Administrators to perform fundamental security tasks. This is also the perfect course for personnel in many other non-security disciplines that require an understanding of security but do not have information security as a primary part of their job description. This large and growing group includes information systems auditors; application programmers; system, network, and database administrators; business unit representatives, and systems analysts.

**I. Course Outcomes:** Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

1. Access Control
2. Cryptography
3. Networks and Communications
4. Malicious Code Attacks
5. Analysis and Monitoring
6. Risk, Response, and Recovery
7. Operations and Administration

**Outcome Objectives/Measures:**

1. Access Control (51 Questions)
  - o Access Control
  - o Access Control Models
  - o Authentication
  - o Authentication Administration
  - o Administration
2. Cryptography (78 questions)
  - o Cryptography
  - o Symmetric Cryptography
  - o Asymmetric Cryptography
  - o Signatures and Hashing
  - o Public Key Infrastructure
  - o Cryptographic Uses
  - o Cryptographic Attacks
3. Networks and Communications (95 questions)
  - o Networking
  - o Local Area Networking
  - o Wide Area Networking

- Protocols
- Network Devices
- Packet Filters
- Firewalls
- Network Address Translation (NAT)
- Remote Access
- Virtual Private Networks (VPN)
- Wireless
- 4. Malicious Code and Attacks (102 questions)
  - Attackers and Malware
  - Reconnaissance Attacks
  - Social Engineering Attacks
  - Network Attacks
  - Password Attacks
  - Availability Attacks
  - Application Attacks
  - Web Server Attacks
  - Browser Attacks
  - Communication Attacks
  - System Hardening
- 5. Analysis and Monitoring (36 questions)
  - Auditing
  - Audit Trails
  - Intrusion Detection
  - Penetration Testing
- 6. Risk, Response, and Recovery (46 questions)
  - Risk Management
  - Risk Analysis
  - Business Continuity and Disaster Recovery
  - Incident Response
- 7. Operations and Administration (59 questions)
  - Security Administration
  - Trusted Computing
  - Development
  - Employee Management

## **II. Textbook & Learning Materials:**

TBA

## **III. Supplies:**

3 Ring 1” Binder

DVD-R, DVD-RW, CD-RW, CD-R, or Flash Drive

2 Different colored Highlighters

## **IV. Course Requirements & Policies:**

61. Classes will consist of lecture, hands-on assignments and research
62. Safety is first priority!
63. No horseplay!
64. The labs must be kept clean
65. All electronic devices are to be turned off before leaving them
66. Unexcused absence will result in a Zero for class attendance and any work missed
67. Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
68. Dishonesty will not be tolerated
69. Abuse of computer equipment and building facilities will not be tolerated
70. Internet usage will be monitored
71. All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous, and sociable) at all times in the classroom.
72. Students displaying inappropriate behavior will be required to leave class.
73. Repeated objectionable behavior is grounds for permanent dismissal.
74. Office hours will be posted for additional instruction
75. Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students.

**V. Learning Assessments: Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

24. Out of the **1500 point total** of combined Exams, Labs one Final Exam, and student class participation/Homework, students must accumulate at least **1050 points** to meet the minimum **70%** to be awarded class credit
25. Tests may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
26. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor.
27. Students with unexcused absences will receive a ZERO for quizzes, homework, exams, and student participation.
28. It is your responsibility to get the materials missed either from other students or by appointment.

**VI. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

## **VII. Office Policy:**

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**Southern Arkansas University Tech**  
**Business Continuity & Disaster Recovery**  
**CS2183**  
**Course Syllabus**

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**I. Course Name and Number:**

CS2183 Business Continuity and Disaster Recovery **4 Credits**

**II. Meeting Schedule:**

**Internet**

**III. Instructional Information:**

Name: Robert Brown

Office: Building TE – Office 12

Phone: (870) 574-4581

Email: [rbrown@sautech.edu](mailto:rbrown@sautech.edu)

Office Hours: TBA

#### **IV. Course Description:**

This course will provide instruction that provides students with a comprehensive treatment of contingency planning, including the components of Incident Response, Disaster Recovery, Business Continuity, and Crisis Management. It offers thorough treatment of the planning process for each area and provides students with a focus on the managerial issues associated with each area. Included in this instruction is information security that identifies management problems associated with business model issues and practices that has important economic consequences that management is accountable.

#### **V. Prerequisite: NONE**

#### **VI. Course Outcomes:**

Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

1. Introduction and Overview of Contingency Planning
2. Organizational Readiness & Business Impact Analysis
3. Incident Response
4. Contingency Strategies for Disaster Recovery
5. Disaster Recovery
6. Business Continuity
7. Crisis Management

#### **VII. Outcome Objectives/Measures:**

1. Introduction and Overview of Contingency Planning
  - a. Understands the concept of Contingency Planning
  - b. Able to define the constituent components of Business Impact Analysis
  - c. Comprehends:
    - Incident Responses Planning
    - Disaster Recovery Planning
    - Business Continuity Planning
    - Crisis Management
2. Organizational Readiness & Business Impact Analysis
  - a. Understands the need for organization readiness and Business Impact Analysis as a basis for all contingency planning and operations

b. Understands how the BIA is used to support Incident Response, Disaster Recovery, Business Continuity, and Crisis Management

### 3. Incident Response

a. Identifies mechanisms used to detect incidences

b. Knows the phases associated with the preparation and organization of incident response operations and the tasks the organization can implement to prevent recurring incidents.

c. Identifies the elements needed for a communications plan and what it can prevent, detect, and react to operational disruptions.

d. Distinguishes response activities that must be taken to conclude a specific response action.

### 4. Contingency Strategies for Disaster Recovery

a. Becomes familiar with the strategies that serve both disaster recovery and business continuity efforts

b. Comprehends data backup and recovery strategies used in a disaster recovery and business continuity efforts that support respective plans

### 5. Disaster Recovery

a. Knows the selection process in establishing a Disaster Recovery Team

b. Understands the individual and team responsibility during a disaster

c. Successfully identifies required actions of each team member during key phases of a disaster, including preparation, response, resumption, recovery, and restoration

### 6. Business Continuity

a. Comprehends the need for business continuity and the steps involved to prepare for business continuity operations

b. Knows how to develop a Business Continuity Plan and it's critical components

c. Understands the planning and efforts involved in a successful business continuity effort and the impact of business continuity on organizational workflow

### 7. Crisis Management

- a. Understands the requirements associated with handling crises- incidents or disasters that impact human safety and life.

### **VIII. Textbook & Learning Materials:**

Principles of Incident Response and Disaster Recovery (ISBN 9781418836634)

### **IX. Supplies:**

PC to which you can install software, MS Word or Notepad, a hard drive, flash/pen drive, or CD-Rs on which to save work and Internet access

### **X. Course Requirements & Policies:**

- a. It is strongly recommended that students follow the course calendar. Adherence to this schedule insures successful completion of the course work within the allowed time. Students must show reasonable progress toward completing the required coursework throughout the semester. Progress is considered to be unsatisfactory when the student has fallen more than two weeks behind the deadlines listed on the course calendar. Students not adhering to this policy may be dropped from the course.
- b. Assignments will be graded, once submitted by you, within 24-48 hours. I try to grade submitted work at least once a day Monday thru Thursday and at least once on the weekend (Friday thru Sunday).
- c. Students must remain in contact with the instructor throughout the course. Satisfactory contact can be accomplished through weekly submissions of assignments, quizzes, exams, and e-mails.
- d. Students must complete all work individually. If it is determined that work has been shared, all parties involved will receive no credit for that assignment or exam. There will be no make-up for the missed score. If cheating is suspected the student may be asked to test in a proctored location.
- e. Incomplete grades are not granted for Internet courses. However, students may request an extension in the event of extraordinary medical or verifiable circumstances. These extensions are for two weeks beyond the end of the semester. Extensions must be requested prior to deadlines.
- f. All students are expected to conduct themselves in a pleasant, civil, courteous, and sociable manner at all times in the course. Rudeness, bigotry, sarcasm, and/or obscene or abusive language will not be tolerated. Students displaying such behavior will be required to leave the course. Any student dismissed from a course for such behavior must seek the approval of the Vice chancellor for academics to reenter the course. Repeated objectionable behavior or disruption of the class will result in permanent dismissal. Faculty members are expected to

dismiss students from their courses whose behavior is detrimental to good order and a positive learning environment.

g. Students must contact the instructor to report any technical or personal issues that may prevent reasonable and satisfactory progress in the course.

h. Students should pay close attention to the Learning Guides for each lesson. The learning guides provide specific details regarding assignments and other activities for each lesson.

i. Students must submit all assignments for each unit before Blackboard will release the exam for that unit.

j. The comprehensive final exam for this course must be taken at an approved proctored test site. Failure to do so will result in a "0" for the final exam. Students may NOT use class notes OR textbooks during the final exam. Electronic, printed, or handwritten copies of course exams may not be used during the final exam. Visit the college website at [www.sautech.edu/docs/proc\\_sites.pdf](http://www.sautech.edu/docs/proc_sites.pdf) for a list of the approved sites or refer to the announcement section of your My Blackboard.

## **XI. Deadlines:**

a. You must show progress in this course **Weekly**.

b. Check the calendar for course deadlines. These are FINAL deadlines. Work submitted after these deadlines will be given a grade of zero.

c. Proctored final exam must per the schedule

d. If you feel you will not be able to meet the deadlines (won't be able to complete the course), you can drop the course by date set by SAU Tech drop policy, and receive a grade of "W" rather than an "F."

## **XII. Learning Assessments:**

**Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

1. Out of the **1500 point total** of combined exams, FINAL Exam, daily participation, students must accumulate at least **1050 points** to meet the minimum **70%** to be awarded class credit

2. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor.

### **XIII. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

### **XIV. Office Policy:**

I will do everything within my power to always be available during my posted office hours. I am easily available with a prior appointment by calling (870) 574-4581 and ask to schedule a time that suits your convenience. At other times you are welcome to contact me by email at [IteachIT@sbcglobal.net](mailto:IteachIT@sbcglobal.net) or [rbrown@sautech.edu](mailto:rbrown@sautech.edu). Please feel free to talk to me about any issue relating to the course. Please ask if this is a good time and do not take it personally if I am busy at that moment. I will make time for you always and depending upon your circumstance I can juggle my schedule for you. You and your education are very important to me as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, email me or if really necessary call me at home.

**Southern Arkansas University Tech**  
**SERVER+**  
**NT2464**  
**Course Syllabus**

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**SAU Tech Mission Statement**

Southern Arkansas University Tech is a comprehensive, two-year, public college committed to providing quality educational programs to meet the needs of its service area. Within its resources, the college accomplishes its mission through technical career programs, transfer curricula, continuing education, developmental education, and administrative, student, and community service.

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**SAU Tech Assessment Philosophy**

Southern Arkansas University Tech has developed a program to assess the learning outcomes of its students to assure that the College is achieving its mission. The Assessment Program is designed to measure the level of skills and competencies gained by students at the program and course levels as well as within the General Education curriculum for all Associate Degree students. Assessment activities are performed in a number of ways including placement exams prior to enrollment, program level goals and objectives, and classroom assessment techniques. Faculty identifies desired student learning outcomes on the program and classroom level and then assesses through various methodologies how well those outcomes have been achieved. The college uses the data obtained from assessment measures to improve student academic achievement and the instructional methodologies delivered by the institution.

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**SAU Tech ADA Policy**

SAU Tech recognizes that a disability may preclude a student from demonstrating required course competencies or from completing course requirements necessary for an A.A., A.S., or A.A.S. degree or certificate programs in the same manner expected of nondisabled students. In compliance with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, qualified students with disabilities may request that appropriate course accommodations be considered. Students are encouraged to meet with Disability Services to develop a plan for their academic accommodations. Requests for accommodations must be made within two (2) weeks of the start of each semester.

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- I. Course Name and Number:** NT 2464 Server+, 4 Credits
- II. Meeting Schedule:** M W 12:45-2:30 PM TE213
- III. Instructional Information:**
- |                       |   |
|-----------------------|---|
| Name: Robert Brown    | Office: Building TE – Office 1                                    |
| Phone: (870) 574-4581 | Email: <a href="mailto:rbrown@sautech.edu">rbrown@sautech.edu</a> |
| Cell Phone:           | Office Hours: TBA   |
- IV. Prerequisite:** None

## V. Course Description:

This course has been designed using CompTIA Course approved materials in preparation for the CompTIA Server+ (2009 Edition) Certification Exam. Students will obtain knowledge and skills required to build, maintain, troubleshoot and support server hardware and software technologies. The successful candidate will be able to identify environmental issues; understand and comply with disaster recovery and physical / software security procedures; be familiar with industry terminology and concepts; understand server roles / specializations and interaction within the overall computing environment. Prerequisite: EE2904 & NT2204.

## VI. Course Outcomes: Upon successful completion the student will achieve a minimum 70% proficiency on the following course outcomes:

10. System Hardware
11. Software
12. Storage
13. IT Environment
14. Disaster Recovery
15. Troubleshooting

### Outcome Objectives/Measures:

1. System Hardware
  - Differentiate between system board types, features, components and their purposes.
  - Deploy different chassis types and the appropriate components
  - Differentiate between memory features / types and given a scenario select appropriate memory
  - Explain the importance of a Hardware Compatibility List (HCL)
  - Differentiate between processor features / types and given a scenario select the appropriate processor
  - Given a scenario, install appropriate expansion cards into a server while considering fault tolerance.
  - Install, update, and configure appropriate firmware.
2. Software
  - Install, deploy, configure and update NOS (Windows / \*nix).
  - Explain NOS security software and its features.
  - Given a scenario, implement and administer NOS management features based on procedures and guidelines
  - Explain different server roles, their purpose and how they interact
  - Summarize server virtualization concepts, features and considerations
  - Describe common elements of networking essentials
3. Storage
  - Describe RAID technologies and its features and benefits
  - Given a scenario, select the appropriate RAID level

- Install and configure different internal storage technologies
- Summarize the purpose of external storage technologies
- 4. IT Environment
  - Write, utilize and maintain documentation, diagrams and procedures
  - Given a scenario, explain the purpose of the following industry best practices
    - Determine an appropriate physical environment for the server location
  - Implement and configure different methods of server access
  - Given a scenario, classify physical security measures for a server location
- 5. Disaster Recovery
  - Compare and contrast backup and restoration methodologies, media types and concepts
  - Given a scenario, compare and contrast the different types of replication methods
  - Explain data retention and destruction concepts
- 6. Troubleshooting
  - Explain troubleshooting theory and methodologies
  - Given a scenario, effectively troubleshoot hardware problems, selecting the appropriate tools and methods
  - Given a scenario, effectively troubleshoot software problems, selecting the appropriate tools and methods
  - Given a scenario, effectively diagnose network problems, selecting the appropriate tools and methods
  - Given a scenario, effectively troubleshoot storage problems, selecting the appropriate tools and methods

## **VII. Textbook & Learning Materials:**

TBA

## **VIII. Supplies:**

- a. 1” 3 ring Presentation Binder (see Instructor)
- b. CD or DVD Rewritable Media or Flash Drive
- c. 2 different colored Highlighters

## **IX. Course Requirements & Policies:**

76. Classes will consist of lecture, hands-on assignments and research
77. Safety is first priority!
78. No horseplay!
79. The labs must be kept clean
80. All electronic devices are to be turned off before leaving them
81. Unexcused absence will result in a Zero for class attendance and any work missed

82. Make-up work for excused absences will be scheduled on a case by case basis at the discretion of the instructor
83. All course deliverables submitted for grade will be typed using Times New Roman, 12 point. Paper must have 1" margins top, bottom, left and right. All sentences must be comprised of proper sentence structure, correct spelling, word usage, grammar, and syntax. A sentence is a complete intellectual thought.
84. Dishonesty will not be tolerated
85. Abuse of computer equipment and building facilities will not be tolerated
86. Internet usage will be monitored
87. All students are expected to conduct themselves in an adult manner (pleasant, civil, courteous, and sociable) at all times in the classroom.
88. Students displaying inappropriate behavior will be required to leave class.
89. Repeated objectionable behavior is grounds for permanent dismissal.
90. Office hours will be posted for additional instruction
91. Faculty members are expected to dismiss students from their classroom whose behavior is detrimental to good order and a positive learning environment for the benefit of the other students.

**X. Learning Assessments: Based on a 1500 Point System, students must obtain 1050 points minimum (70% or higher) to receive class credit**

29. Out of the **1500 point total** of combined exams and Labs, Midterm and Final exam, and class participation, students must accumulate at least **1050 points** to meet the minimum **70%** to be awarded class credit
30. Tests may be True/False, Multiple Choice, Matching, Fill in the Blank, Short Answer, Listing or essay format – in class open or closed book, no notes or notes, take home or any combination chosen by the instructor
31. Students who have excused absences may arrange to makeup missed exams or quizzes as determined by the instructor. It is your responsibility to get the materials missed - otherwise the recorded zero will remain as your grade.

**XI. Mastery Level:**

- A = 90 – 100%**
- B = 80 – 89%**
- C = 70 – 79%**
- D = 60 – 69%**
- F = Below 60%**

**XII. Office Policy:**

I will do everything within my power to be available during my posted office hours. As a faculty member with other teaching responsibilities, I am juggling many responsibilities. An appointment may be scheduled by calling 574-4581. You are welcome to contact me by email at [rbrown@sautech.edu](mailto:rbrown@sautech.edu) or [ITeachIT@sbcglobal.net](mailto:ITeachIT@sbcglobal.net) . Please feel free to talk to me about any issue relating to the course. If by chance we

should meet in the hall or on campus, I am sometimes harried with other commitments, please do not take it personally if I am busy at that moment. I will make time for you and depending upon your circumstance, I can juggle my schedule for you. You and your education are very important to me, as it should be to you. I am here to assist you so please do not hesitate to come by my office, call me, email me, or if necessary call me at home

**APPENDIX C**  
**Computer Information Technology Full-Time Faculty Vita**

Jill McCollum

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<b>Experience</b>	2000-present	SAU Tech	Camden, AR
	Computer Information Technology Instructor		
	<ul style="list-style-type: none"><li>▪ Wired three classrooms for network and implemented the use of virtual PCs into courses</li><li>▪ Instructed computer technology, networking, and applications courses</li><li>▪ Conducted Business &amp; Industry Training classes</li><li>▪ Developed and taught Internet courses</li><li>▪ Served as PBL Advisor, Cisco Networking Academy Main Contact, and on committees for E-Link (ARE-ON), Internet Curriculum Review, Assessment, and Degree Program Development</li></ul>		
	1996-1999	Harmony Grove High School	Camden, AR
	Business Teacher		
	<ul style="list-style-type: none"><li>▪ Technology Coordinator 1996-1997</li><li>▪ Updated and maintained computer lab</li><li>▪ Implemented new programs into the curriculum</li><li>▪ Lead FBLA chapter to receive highest honors</li><li>▪ Served on Personnel Policy, Homecoming, Parent &amp; Community Involvement and pageant committees; co-Yearbook sponsor; and as Jr. class sponsor and Vocational Department Secretary</li></ul>		
	1990-1996	Fairview Junior High Camden Career Center	Camden, AR
	Business and Marketing Teacher		
	<ul style="list-style-type: none"><li>▪ Taught Business, Computer Technology, and Marketing classes</li><li>▪ Coordinated cooperative work experiences</li><li>▪ Jr. High FBLA Advisor and DECA Advisor</li></ul>		
<b>Education</b>	1991-1995	University of Central Arkansas Conway, AR	
	<ul style="list-style-type: none"><li>▪ Master of Science in Education-Business Education</li></ul>		
	1986-1990	Southern Arkansas University Magnolia, AR	
	<ul style="list-style-type: none"><li>▪ Bachelor of Science in Education-Business Education</li></ul>		
<b>Technology Certificates</b>	Cisco Certified Academy Instructor, CCNP and CCNA; Certified Ethical Hacker, Security +, Certified Cyber Security Education Consortium Instructor, ADE Educator's License; Microsoft Office Master Certified Instructor		

# Robert Brown, CW3(R), USA

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**Experience**                      2005-present                                      SAU Tech                                      Camden, AR

Computer Information Technology Instructor

- Responsible for instruction toward IT AAS degree, and A+, Network+, Security+, and ISSP industry certifications, Certificates of Proficiency and Technical Certificates
- Designed, and installed CAT6A STP (10G ready) network infrastructure
- Designed and installed HDMI connectivity throughout the computer lab
- Developed and Instructed IT, Repair, networking, and security courses
- Developed and taught Internet courses
- Developed IT Department Computer Technician AAS Degree program responsible for increasing student body and retention by 32%
- Designed, installed, and instructed an advanced Computer Lab supporting 6 servers and 42 PC's and 5-segmented networks.
- Served as Faculty Senate Chair for two consecutive years
- Served as AQIP #8 Team leader

91-2000                                      Chief Warrant Officer (CW3/W-3)                                      World Wide

Military Employment

- Systems Security Manager - Developed, implemented and managed IS Security Policies and Program resulting in 0 incidences
- HP & SCO Unix, and Windows System Administrator - Provided consultative and analytical resources - reduced daily human and system errors to 0%
- Oracle Database Administrator - Increased South West Asia reporting accuracy from 14% to 100% to the National Inventory Control Point (NICP)
- Systems Analyst - Developed Software Applications and Processes, Security plans and procedures
- Theater Level Logistics Officer - Maintained real-time asset visibility of approximately 347,000 tons, and +17,860 line items daily with 0% loss and 0% incident (actually gained total asset visibility)
- Ammunition Technician - Reduced annual ammunition expenditures by 33% and turn-ins to 0%, and overall readiness from 42% to 89% in 12 months
- Nuclear Weapons Technician, Nuclear Weapons Maintenance Operations Officer – Theater Level commodity reporting efficiency from 4-6 days to 4-8 hours

Awards  
 Bronze Star, 3 Army Commendations, 4 Army Achievements, 3 Good Conduct Medals, South West Asia Medal, Saudi Arabia Liberation & Kuwait Liberation Medals,

**Civilian Education**                      08-09 Colorado Technical University – Masters of Science in Management –Information Systems Security                                      GPA 4.0                      Colorado Springs, CO

CERTIFICATES: Computer Systems Security Foundations; Software Information Assurance; Security Management; Systems Security Certification and Accreditation; Network Security; Project Planning; Project Management (PM) Process In Organizations; Execution, and Closure, Schedule and Cost Control Techniques; Contracting and **Procurement in PM**

06&09 Intense School - Security+, Network+, and A+ Certification - Austin, TX and Dulles, VA

CompTIA CERTIFICATIONS: Security+, Network+, A+

07 New Horizons – MCP, MCDST, MCSA-Security Instructor Led Training – Shreveport, LA

CERTIFICATES: Supporting Users and Troubleshooting Win XP Pro OS; Supporting Users and Troubleshooting Desktop Applications on Win XP Pro OS; Managing and Maintaining a Windows Server 2003 Environment; Implementing, Managing, and Maintaining a Windows Server 2003 Network Infrastructure; Installing, Configuring, and Administering Win XP Pro; Design, Implement, and Managing a Microsoft Systems Management Server 2003 Infrastructure; Implementing and Administering Security in a Windows Server 2003 Network

03-05 Colorado Technical University – Bachelor of Science – Business Administration – Information Technology GPA 3.96 Colorado Springs, CO

CERTIFICATES: E-Business, Marketing and the Virtual Marketplace, Business Decision-Making, Managing Human Resources, Operations Management Principles, Organizational Behavior Principles, Global Managerial Economics, Managerial Accounting Practices, Financial Management Principles, International Business Practices, Organizational Change, Introduction to Information System, Project Management Theory, Database System, Programming Concept, Information Systems Security, Network Systems, Business Strategy, and Management for Information Systems

99-00 Learning Tree International - Microsoft Windows NT Certified Professional Reston, VA

CERTIFICATES: Windows NT Server and Workstation Optimization and Troubleshooting, Implementing Windows NT Security, TCP/IP for Windows Networks, Relational Databases: Design, Tools & Techniques and Oracle 8i: A Comprehensive Hands-On Instruction

98-99 PRC International- UNIX System Administrator Reston, VA

CERTIFICATES: HP & SCO UNIX System Administration

79-00 Department of Defense Service Related College World Wide

**Military Education**

Human Relations, Logistics Management, Management Problems, Management, Security Management, Operations Management, Manager Communications Techniques, Maintenance Management, Industrial Science, Industrial Safety, Leadership and Supervision, Material Safety, Toxic Material Handling, Nuclear Technology, Office Management, Personnel Supervision, Electrical/Electronic Troubleshooting, and Technical Writing

**Technical Certificates**

CompTIA Security+, CompTIA Network+, CompTIA A+

## APPENDIX D

### Computer Information Technology Declared Majors and Graduates, 2010-2012

<u>Academic Year</u>	<u>Degree/Credential</u>	<u>Declared Majors</u>	<u>Graduates</u>
2009-2010	AAS	68	8
2009-2010	TC	8	1
2009-2010	CP Certified IT	2	2
2009-2010	CP Comp Engineer	*	*
2009-2010	CP Cisco	3	3
2009-2010	CP A+	6	4
2010-2011	AAS	71	2
2010-2011	TC	16	6
2010-2011	CP Certified IT	4	0
2010-2011	CP Comp Engineer	*	1
2010-2011	CP Cisco	4	2
2010-2011	CP A+	6	3
2011-2012	AAS	61	10
2011-2012	TC	10	9
2011-2012	CP Certified IT	4	0
2011-2012	CP Comp Engineer	*	4
2011-2012	CP Cisco	3	0
2011-2012	CP A+	2	1

Percentage of graduates based on declared majors by academic year:

2009-2010	20.69%
2010-2011	13.86%
2011-2012	31.58%

Overall percentage of graduates based on declared majors: 21.21%

\*Certificate of Proficiency in Computer Engineering was developed for AY2010-2011. The CP is a Concurrent Enrollment CP for high school students who do not “declare” for the credential.

**APPENDIX E**  
**Graduate Employment Survey**  
**Computer Information Technology Graduates**  
**2010-2012**  
**(Responding)**

Credential		Graduation Year	Employer	Required Credential	Using Skills	Salary
TC/CP	CT	2010	Wal-Mart	No	No	
CP	CT	2011	Mill Creek Fordyce	No	Yes	
AAS/TC	NA	2012	Murphy Oil Corp.	No	Yes	\$39,500.00
AAS/TC	CT	2012	Holiday Inn	No	No	
AAS	NA	2010	Applied Control	Yes	Yes	\$31,000.00
AAS	CT	2010	State Highway Dept.	No	No	
AAS/TC	NA	2012	Caddo Parrish Schools	No	No	
AAS	NA	2010	Leader Communications	No	Yes	\$21 hr.
AAS/TC	CT	2012	Arkansas State Parks	No	No	
AAS	NA	2011	MI-SWACO	Privileged	Yes	\$80,000.00
CP	NA	2009	MCR Technical Service	No	Yes	\$35,000.00
CP	NA	2010	Coca-Cola	No	No	
TC	NA	2011	Aerojet	Yes	Yes	

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## **EXTERNAL PROGRAM REVIEWS**

## Computer Information Technology Program Local Reviewers Report

Reviewer:

Michael Troop

Department Head

Computer Systems and Networking Technology

Arkansas State University - Beebe

### *I. Review of Program Goals, Objectives and Activities*

#### *A. Are the intended educational (learning) goals for the program appropriate and assessed?*

The educational goals for the program appear to be appropriate encompassing a strong foundation within the technology field. Students have the opportunity to develop skills that may lead the way to successfully passing a number of industry standard certification exams such as the A+, Network+, CCNA and more. These third-party certifications may help in showing the competencies of the student to potential employers.

Assessment is covered in section VII of the self-study. The program and its courses are assessed via the students learning goals and outcomes. Assessment encompasses such areas as communication literacy, computer literacy, global awareness, critical thinking, and research skills. Based on the program goals and outcomes of the networking track listed within the self-study, the student competencies have a 4.75 percent increase in the 2011-2012 academic year as compared to the 2010-2011 academic year. A slight decrease is noted within the technician track indicating a 1.5 percent decrease from the previous academic year. However, it should be noted that the competency rates for both tracks are in the 80 – 90 percentile. This appears to indicate a strong skill-set among students.

#### *B. How are the faculty and students accomplishing the program's goals and objectives?*

The faculty within the program have a long list of professional development activities listed within section IV of the self-study report. This dedication to maintaining and improving ones skills helps to keep the program fresh and up-to-date. This should help to keep the courses offered within the program relevant to today's industry demands.

Students are accomplishing the program's goals and objectives by meeting the criteria laid out by the institution. This is apparent through the students' assessments as indicated in the previous section. However, it should be noted that Appendix D does indicate a rather low retention rate for the AAS degree. Although the 2011-2012 academic year indicates a measurable increase in retention from previous years, this should be an area of concern.

C. *How is the program meeting market/industry demands and/or preparing students for advanced study?*

As indicated in section I part (3) of the self-study, a number of sources predict a large number of IT jobs that are needed within the technology field. Network administration, desktop support, Windows administration are high on the list. Security professionals are climbing rapidly to the top of the list. The Network & System Administrator, Computer Technician, and Core courses offered within the Computer Information Technology program readily adhere to the demands of industry.

Section VII part (4) of the self-study indicates that some of the programs graduates have gone on to other institutions for more advanced studies. Although tracking of the program graduates has been sparse, the institution appears to be moving in the right direction by their membership purchase into the National Student Clearinghouse.

D. *Is there sufficient student demand for the program?*

The number of students declaring this program as their major has fluctuated slightly over the past four or five years. However, 58 students have currently declared this program as their major. This indicates a sufficient student demand for this particular program.

E. *Do course enrollments and program graduation/completion rates justify the required resources?*

The assessment results indicate strong student competencies. Student demand in the program is at a sufficient level. However, the retention rate in this program is on the low end. Many programs within the IT field have retention issues. This institution does appear to be addressing some of those issues. The 2011-2012 academic year shows a 17.72% increase in retention from the previous academic year. With an increasing number of job opportunities becoming available for individuals within the IT field, perhaps it is safe to assume that the retention level of this program will continue to rise as well. It does appear that the resources are justified at this time.

II. *Review of Program Curriculum*

A. *Is the program curriculum appropriate to meet current and future market/industry needs and/or to prepare students for advanced study?*

The program curriculum does appear to meet both current and future industry needs. As indicated, Chief Information Officers are currently looking for Network Administrators, Desktop Support personnel, and Windows Administrators. Future indications predict more growth within these areas and IT security. This program addresses those needs.

- B. *Are institutional policies and procedures appropriate to keep the program curriculum current to meet industry standards?*

The institution employ's faculty with the correct credentials to teach the program courses. The institution also evaluates the faculty members in a sufficient manner. A program advisory committee made up of IT professionals within the local area is in place to help lead the institution along the appropriate path – although, there is no mention as to how often the institution consults with the advisory committee. The program is kept up-to-date with the latest technology, software, and equipment that can be purchased on a limited budget. The institution appears to heavily promote professional development as well within this program, as is noted within part IV section (2) of the self-study.

- C. *Are program exit requirements appropriate?*

Although a capstone course is not required for this program, it does not appear to be a viable concern. The courses appear to build upon one another – expanding the students' knowledgebase on specific topics. This is noted by the progressive Cisco Networking courses, support courses, and troubleshooting courses. The assessment material within the courses/program gives the appearance that the students are acquiring the necessary skills to be successful in the IT field.

- D. *Does the program contain evidence of good breath/focus and currency, including consistency with good practice?*

The student demand for the program sits at an average of 64.5 students per academic year over the past four academic years. The 2012-2013 year is noted to be 58 students. This is not far from average.

The program incorporates courses that are focused towards industry standards, along with current and future needs. The courses are being taught by two faculty members that are holding industry certifications and are aggressively working on their professional development. The program also has the latest technology, software, and equipment that is affordable by the university. This provides the evidence needed.

- E. *Are students introduced to experiences within the workplace and introduced to professionals in the field?*

There is no indication within the self-study report that any of this is taking place within the program. This appears to be an area that should be addressed.

- F. *Does the program promote and support interdisciplinary initiatives?*

The self-study report does not truly show that the program promotes or supports interdisciplinary initiatives. The program does provide the Introduction to Computers

course for most transfer and career/technical education degree programs, but that appears to be the extent of the programs support.

- G. *Does the program provide respect and understanding for cultural diversity as evidenced in the curriculum, in program activities, in assignment of program responsibly and duties; in honors, awards and scholarship recognition; in recruitment?*

Very little evidence is available with this self-study report. Unless overlooked, there is no mention of recognition listed within the report. However, it does appear that within their recruitment efforts all potential students are treated the same. Students are exposed to lab environments and the faculty explains the methods and expectations of the program. Students can also be involved in activities such as Cisco NetRiders Competition and PBL's competition. Each of the course syllabi includes conduct rules and policies that indicate treating each other with respect and other things.

### III. *Review of Academic Support*

- A. *Does the program provide appropriate quality and quantity of academic advising and mentoring of students?*

Academic advising is not specifically covered in this report. The report does indicate that the college's retention efforts include an early alert system, mentoring, academic advising, and tutoring. It also mentions that the program faculty use lab time for tutoring students.

- B. *Does the program provide for retention of qualified students from term to term and support student progress toward and achievement of graduation?*

The report does indicate that the college's retention efforts include an early alert system, mentoring, academic advising, and tutoring. It also mentions that the program faculty use lab time for tutoring students. Planned program improvements are in place. One improvement being planned is to develop a comprehensive student tracking system for monitoring student development that ensures students retention and success. However, no other material is listed.

### IV. *Review of Program Faculty*

- A. *Does program faculty have appropriate academic credentials and/or professional licensure/certification?*

Yes, the two faculty member's credentials are appropriate. Both members possess a Master's degree and have a background within the IT field. Both also possess technology certifications that coincide with the courses they teach. Jill McCollum also possesses the ADE Educator's License.

- B. *Are the faculty orientation and faculty evaluation processes appropriate?*

Faculty orientation and evaluation is covered in detail within the report. The orientation process is laid out within section III part (3) of the report. The orientation process is appropriate. Faculty evaluation is also covered here, as well as in section VII part (3) of the report. Faculty are evaluated by students, the Vice Chancellor for Academics, and by a self-study evaluation they complete as well. This is appropriate for faculty evaluation.

C. *Is the faculty workload in keeping with best practices?*

The university indicates that a full-time faculty member load is 15 credit hours, and that faculty members are allowed to carry one course overload. Additional overloads must be approved by the Vice Chancellor for Academics and the Chancellor. Jill McCollum appears to be staying within policy. Robert Brown, however, is teaching 22 credit hours with 2 overload courses for the past two semesters. If this is commonplace, perhaps it would be better for the university to hire an adjunct instructor for one of Mr. Brown's overload courses.

V. *Review of Program Resources*

A. *Is there an appropriate level of institutional support for program operation?*

The institution provides an annual \$20,000 budget for the program and professional development funds for faculty to retain industry-standard certifications. The faculty senate provides funding for travel and professional development opportunities of their choosing for faculty. A student worker budget of \$2,000 is also allotted, as well as some additional monies from the academic program improvement budget of \$60,000 for special needs.

B. *Are faculty, library, professional development and other program resources sufficient?*

The number of full-time faculty for this program is sufficient. However, the institution may want to consider hiring an adjunct if Mr. Brown's schedule continues to require him to teach two overload courses. Both faculty members appear to utilize professional development funds very well from the looks of their previous training. The library is not allotted monies based on programs. They simply purchase based on instructor recommendations. The Computer Information Technology program for the previous three years totaled \$999.00. This appears to be adequate for an IT program. The IT community utilizes the Internet for much of its information due to the frequency of change that occurs in the field. All of these appear to be efficient for such a program.

VI. *Review of Program Effectiveness*

A. *Indicate areas of program strength.*

Program strengths lie in the credentials of the faculty members, such as their Master's degrees and industry certifications. Other strengths include the institutional resources allocated towards the program, the program keeping new and up-to-date equipment in place for the students, the faculty's willingness to seek out professional development, and a highly skilled and diversified advisory committee.

- B. *Indicate the program areas in need of improvement within the next 12 months; and over the next 2-5 years.*

The report suggests that industry certification exam fees are an area of concern for students. Certification exams are sometimes required for employment within the industry, but many businesses view them as a "better" choice when two identical applicants are seeking the same single position. These exams can be important, but they should not be heavily relied upon.

Another improvement area is providing job placement services for program graduates. The institution indicates that hiring a placement coordinator could help in this area, and this individual could help in tracking students after graduation. This is an area that should be addressed as quickly as possible.

Retention rates are low within the program. The institution should focus their attention on these retention rates over the next few years.

Distance education is growing at many institutions at a very high rate. The institution may want to consider moving a course or two towards distance delivery within the next few years to accommodate the diverse student body.

A process needs to be developed to collect student/alumni/employer satisfaction information. It is great that the faculty keeps up with who they can, but it may be better if, perhaps, surveys were distributed out to students/alumni/employers for satisfaction information. If not surveys, perhaps some other form of collection process could be utilized.

- C. *Indicate areas for program development based on market/industry demands that have not been identified by the institution.*

It appears that the report has covered about all of the areas industry is demanding. The faculty members are doing a good job of utilizing the program development resources offered to them.

VII. *Review of Instruction by Distance Technology (if program courses offered by distance)*

- A. *Are the program distance technology courses offered/delivered in accordance with best practices?*

Currently, the program courses are not offered through Distance Technology.

- B. *Does the institution have appropriate procedures in place to assure the security of personal information?*

Perhaps due to the fact that distance technology is not offered via this program, this information is not available within this report.

- C. *Are technology support services appropriate for students enrolled in and faculty teaching courses/programs utilizing technology?*

Perhaps due to the fact that distance technology is not offered via this program, this information is not available within this report.

- D. *Are policies for student/faculty ratio, and faculty course load in accordance with best practices?*

For in-class courses, not distance technology, policies are in place for student/faculty ratio as indicated in the report.

- E. *Are policies on intellectual property in accordance with best practices?*

Perhaps due to the fact that distance technology is not offered via this program, this information is not available within this report.

#### VIII. *Review of Program Research and Service*

- A. *Are the intended research and creative outcomes for each program appropriate, assessed and results utilized?*

Students are subjected to communication literacy, computer literacy, global awareness, critical thinking, and research skills. The program provides the necessary competencies, skills, and knowledge to meet the programs expectation. Students have the ability to focus on different tracks within the IT field – such as networking, computer technician, and system administrators.

The report does not go into much detail concerning assessment. It does indicate that assessment is done, but it does not indicate how the information is utilized.

- B. *Are the intended outreach/service/entrepreneurial outcomes for each program's initiatives appropriate assessed and results utilized?*

There is insufficient data within the report to give a truly conclusive answer to this question. The assessment process is a bit vague, and no information is given as to how the results of assessment are utilized.

#### IX. *Local Reviewer Comments*

- A. *How is the program meeting market/industry demands and/or preparing students for advanced study?*

The program is offering courses that are viable within the local industry. Networking, computer technician, security, and system administration courses are areas within the IT field that many industry leaders are currently seeking qualified applicants to fill their employment needs. Although the institution has little information concerning students moving on to advanced studies, it should be noted that they do have some that are successfully enrolled in other programs.

- B. *What program modifications are needed?*

Better documentation as to the role of their Advisory Committee and their recommendations. Better tracking of students after graduation is needed. Mentoring and tutoring is mentioned within the self-study report; however, there is little to no information listed concerning advising. Perhaps advising is an area the institution should look to for better retention rates.

X. *Report Summary*

- A. *Include reviewer comments on the overall need for program graduates/completers in the local area, region and/or nation over the next 5 years.*

Each of the emphasis areas available through the Computer Information Technology program house specific material needed within the local area, the region, and the nation. As the report indicates, predictions from IT professionals and the United States Bureau of Labor Statistics predict that the jobs in these emphasis areas are growing fairly quickly. Graduates/completers from this program should benefit from the material taught for several years to come.

- B. *Include reviewer comments on overall program quality, state program review process, etc.*

It appears that the overall quality of the program is good. The faculty are highly qualified, the advisory committee is very diversified and skilled, the institution provides appropriate resources towards the program, and a sufficient number of students enroll in the program each year. The institutions policy on orientation and evaluation of faculty helps to support the overall quality of the program.

The review process is a great way to have an unbiased individual review the state of the program. Not only does it help the institution and the state, but it also shows the reviewer to processes involved in keeping a program such as this going.

# Academic Program Review for SAU Tech Computer Information Technology Program

External Reviewers Report

Reviewer:

Mary McWilliams

Adjunct Faculty, Computer Management Systems

Northeast Texas Community College

## IV. Review of Program Goals, Objectives and Activities

### F. Are the intended educational (learning) goals for the program appropriate and assessed?

*Discussion on specific educational goals is specific, but no assessment criteria are provided.*

*Goals presented are:*

- i. Greater employment potential*
- ii. Opportunity to develop skills needed to obtain a job in computer technology*
- iii. Offer appropriate variety of technical skill sets to meet employment needs*
- iv. Provides foundation for obtaining variety of professional certifications*

*These goals are program appropriate, but there are no measurable goals or yearly targets provided. It is difficult to assess if a goal is being achieved when it is not being measured. My recommendation is to assess each of these goals using appropriate metrics and targets.*

### G. How are the faculty and students accomplishing the program's goals and objectives?

*Student assessment results indicate the Networking track has improved 81% to 86%, and that the Technician track is slightly down from 96% to 94.5%. The Graduate Employment Survey indicates that only slightly more than 50% of graduates are actually using the skills learned in the degree program on their current jobs.*

*Aside from measuring student outcomes, and the Graduate Employment Survey no other student/faculty success measures are included in the Self Study. There appears to be a gap between internal competency measures and end student success using skills learned on their jobs. I would suggest that the industry-based program advisory board might be a perfect team to look into this issue. It is unclear what role this board performs in relationship to the computer technology program at SAU Tech, and this would certainly be a worthwhile endeavor for this team.*

### H. How is the program meeting market/industry demands and/or preparing students for advanced study?

*The career demographic data shows that your program should be meeting market and industry demands. It is difficult to tell from the small amount of transfer data collected, if students are pursuing advanced study. Continued use of the National*

*Student Clearinghouse to determine trends is needed. This combined with trend data from the Graduate Employee Survey should help to more accurately answer this question. An ideal metric would be to compare the graduate numbers with those answering “yes” on your survey, or those continuing on to earn a more advanced degree. I would look for these numbers to trend upward.*

**I. Is there sufficient student demand for the program?**

*There appears to be sufficient student demand for the Computer Information Technology degree program. Provided demographic data indicates future need for these types of degree programs, particularly in your two areas of concentration.*

*It would be useful to look at your enrollments based on the provided demographic data to determine if minority groups are well represented in your enrollments as compared with your local area demographics.*

**J. Do course enrollments and program graduation/completion rates justify the required resources?**

*Since both professors have overload courses each semester, it appears that course enrollments are above your current resource level. However, when one compares declared majors with graduates, there is a fairly high retention issue. Your student competencies are very high, which indicates students are successfully completing each class. If students are succeeding in each class, then something else is causing them to leave your program. The reasons for this need to be identified and actions taken to increase retention based on this analysis.*

*Perhaps using one or two adjuncts to teach the overload classes, would free up your full-time faculty members to be able to spend more one-on-one time with each declared major student.*

**V. Review of Program Curriculum**

**H. Is the program curriculum appropriate to meet current and future market/industry needs and/or to prepare students for advanced study?**

*The labor statistics indicate that network administration, database management, desktop support, and Windows administration are all predicted to be fast growing career opportunities. The current curriculum is appropriate to provide students with the needed skills to perform in these jobs.*

*There is not enough data to document student success after graduation, either on the job successes or advanced study successes. Current use of the National Student Clearinghouse, and formalizing your Graduate Employment Survey should be valuable tools to further answer this question. I recommend continuing with both of these initiatives.*

**I. Are institutional policies and procedures appropriate to keep the program curriculum current to meet industry standards?**

*The impressive list of professional development activities over the past two years for both professors helps to assure the program is current and that both of the professors are interested in keeping current with their skills. In addition, input from the*

*industry-based program advisory board in this area will help to assure keeping your program current.*

**J. Are program exit requirements appropriate?**

*The defined curriculum paths, and degree and certificate requirements are clearly stated, and transition nicely one to the next. There is no capstone class offered. Considering the results from your informal Graduate Employment Survey, a class of this type to help students make the transition from classroom to career might be useful for your students. Perhaps combining this course with some type of internship program would help students become better prepared for their future jobs, and might even result in obtaining an appropriate job.*

**K. Does the program contain evidence of good breath/focus and currency, including consistency with good practice?**

*The program contains courses that are focused towards industry standards, which is evidenced by the list of professional certifications that many of your courses are targeted towards helping students earn.*

*The use of an advisory board, coupled with a formal course and curriculum development process is evidence of best practices from other colleges.*

**L. Are students introduced to experiences within the workplace and introduced to professionals in the field?**

*I could not find this discussed anywhere in your self-study report. Each individual course syllabus contains activities such as hands-on work, troubleshooting, planning activities, configuring labs, filtering, analyzing, case studies, and installations that help to simulate real world workplace experiences.*

*Inviting some professionals in the field to class to discuss a particular topic and to be available for questions would add to your already well-designed classes. This might also help to better prepare students for their future careers in computer information technology.*

**M. Does the program promote and support interdisciplinary initiatives?**

*You have at least two classes - Technical Math and Technical Writing that cross disciplinary boundaries. You should always be on the lookout for other areas where this makes sense- perhaps technical speaking.*

*The Introduction to Computers class is available for other degree programs and transfer credits.*

**N. Does the program provide respect and understanding for cultural diversity as evidenced in the curriculum, in program activities, in assignment of program responsibly and duties; in honors, awards and scholarship recognition; in recruitment?**

*This subject is not discussed in the Self-Study review document. It is important to attract minority students into our technical programs. Many students from rural areas do not have family that supports this type of career. We, as a nation, fall short in this area. I suggest looking at your local area demographics, comparing this with*

*the mix of students declaring computer information technology as their major, and taking action as appropriate for large differences.*

#### **VI. Review of Academic Support**

##### **C. Does the program provide appropriate quality and quantity of academic advising and mentoring of students?**

*The Self-Study document does list early alert, mentoring, academic advising, and tutoring as methods used to help retention. No detailed information is provided on how these are accomplished. Considering that retention is an issue, you might want to place emphasis on your student tracking system improvement suggested near the end of your report.*

*In addition, using an adjunct to reduce the work load for your full-time professors would provide them with more one-on-one time with their students.*

##### **D. Does the program provide for retention of qualified students from term to term and support student progress toward and achievement of graduation?**

*The data indicate that there is a retention issue, even though the success metrics indicate that your students are completing classes successfully. Attention is needed in this area.*

#### **IV. Review of Program Faculty**

##### **a. Do program faculty have appropriate academic credentials and/or professional licensure/certification?**

*The two faculty members have the required credentials to teach in this area, both having masters degrees. They also have an impressive list of certifications, and seem dedicated to professional development – as is evidenced by a lengthy list of conferences and classes.*

##### **b. Are the faculty orientation and faculty evaluation processes appropriate?**

*The faculty evaluation process appears solid, with student evaluations, faculty observations, and annual vice chancellor evaluations of faculty based on student evaluations, self-evaluations, assessment data, student success data, and professional development included. This is consistent with best practices for faculty evaluation at most schools.*

##### **C. Is the faculty workload in keeping with best practices?**

*Two full-time faculty members is appropriate for the current enrollments. A best practice in this area is typically 15-16 credit hours taught by each faculty member. The college policy states that a full load at SAU Tech is 15 credit hours. Both faculty members appear to be routinely teaching 1-2 overload courses. This might add to the retention issue. The use of an adjunct would help in this area. No additional full time faculty is needed at this time.*

#### **V. Review of Program Resources**

##### **C. Is there an appropriate level of institutional support for program operation?**

*The funding provided to faculty to earn and maintain their technical certifications is excellent.*

**D. Are faculty, library, professional development and other program resources sufficient?**

*As mentioned before, using an adjunct is something that should be considered to augment your faculty resources. The current professional development activities are impressive and appear to be appropriately funded.*

*Technology changes rapidly, which makes traditional library funding fairly low. However, the library could include reference materials for students that are online – including you tube and other video sources. This new generation appreciates a varied media, and video is one way to achieve this. Recommendations could come from the professors in this area, and from the textbook publishers.*

**VI. Review of Program Effectiveness**

**A. Indicate areas of program strength.**

*The areas of strength include:*

- *The processes used to keep the computer information technology program current*
- *The industry-based program advisory board*
- *The faculty's educational credentials, and their diverse set of professional certifications*
- *The willingness of both the college and the faculty to attend a wide variety of conferences and classes, and the funding for these efforts*
- *The funding to keep classrooms and labs current*
- *The Technical Math and Technical Writing courses that cross disciplinary boundaries.*

**B. Indicate the program areas in need of improvement within the next 12 months; and over the next 2-5 years.**

*Areas for improvement include:*

*The addition of a class that helps students earn jobs in the chosen careers. Perhaps an internship program might be effective in this area.*

*Start to offer distance learning classes for some of your classes. The Introduction to Computers class might be a good one to start offering. Our newest generation is used to this technology and delivery media, and you should be making it available as an alternative for them in the near future.*

*Determine measurable goals and collect data on these goals. Improve your data collection and analysis techniques; particularly for inputs from industry and graduates.*

*Use of an adjunct professor would reduce the course overload for the two full-time professors. This would also free up these two professors to spend more one-on-one time with students to help increase retention and completions.*

**C. Indicate areas for program development based on market/industry demands that have not been identified by the institution.**

*I think the idea of grant funding for certification exam fees is a good idea. Many large companies look to these independent certifications when hiring. However, more attention to your local area needs based on advisory board input is also needed. It was unclear how the advisory board is used in your curriculum design process. Increased involvement might also increase local area hiring.*

**VII. Review of Instruction by Distance Technology (if program courses offered by distance)**

**A. Are the program distance technology courses offered/delivered in accordance with best practices?**

*Currently, the Computer Technology Program does not use distance technology, with the exception of some online assignments and exams within individual face-to-face classes.*

*Considering the way that this delivery method is growing in most colleges, I recommend that you consider offering many of your courses in this way. Computer literacy should not be an issue for your target students. This would be a way to increase your enrollments.*

**B. Does the institution have appropriate procedures in place to assure the security of personal information?**

*Currently, the Computer Technology Program does not use distance technology, with the exception of some online assignments and exams within individual face-to-face classes.*

**C. Are technology support services appropriate for students enrolled in and faculty teaching courses/programs utilizing technology?**

*Currently, the Computer Technology Program does not use distance technology, with the exception of some online assignments and exams within individual face-to-face classes.*

**D. Are policies for student/faculty ratio, and faculty course load in accordance with best practices?**

*Currently, the Computer Technology Program does not use distance technology, with the exception of some online assignments and exams within individual face-to-face classes.*

**E. Are policies on intellectual property in accordance with best practices?**

*Currently, the Computer Technology Program does not use distance technology, with the exception of some online assignments and exams within individual face-to-face classes.*

**VIII. Review of Program Research and Service**

**A. Are the intended research and creative outcomes for each program appropriate, assessed and results utilized?**

*The program provides hands-on learning that includes troubleshooting, planning activities, configuring labs, filtering, analyzing, case studies, and installations. All of these contribute to student program outcomes. The success measures demonstrate the effective mastering of these skills.*

**B. Are the intended outreach/service/entrepreneurial outcomes for each program's initiatives appropriate assessed and results utilized?**

*This topic was not covered in the Self-Study report. Improvements in community outreach might be improved, since it is now based on an informal instructor contact program.*

**IX. Local Reviewer Comments**

**C. How is the program meeting market/industry demands and/or preparing students for advanced study?**

*The local reviewer pointed out faculty and funding as two key strengths. The advisory board was also cited as strength. It was difficult to determine the impact of the advisory board, since little information was provided in the Self-Study regarding how their inputs are used.*

**D. What program modifications are needed?**

*The local reviewer pointed out the need for job placement services, retention rate improvement, distance education courses, and better survey methods to determine student and graduate satisfaction. I agree with all of these recommendations.*

## **X. Report Summary**

- C. Include reviewer comments on the overall need for program graduates/completers in the local area, region and/or nation over the next 5 years.**

*It appears from the demographic data that you presented, that this degree program will be needed for at least the next five years. I feel that it is also appropriate nationwide, which might be another reason to expand your online training efforts.*

- D. Include reviewer comments on overall program quality, state program review process, etc.**

*I am impressed with your overall program quality, both the curriculum content and quality. Data was not included on student evaluations, so it is difficult to comment too much on instructor quality from the students' perspectives. However, the student outcomes measure well above 80% mastering of course skills and knowledge. This is impressive. The willingness of the faculty to keep current is also an indication of the quality of instruction and course design at SAU Tech.*

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## **INSTITUTIONAL RESPONSE TO PROGRAM REVIEWERS**

## **Academic Program Review for SAU Tech Computer Information Technology Program Institutional Response to Reviews**

Southern Arkansas University Tech is pleased with the findings of the local area expert reviewer and the out-of-state expert reviewer for the academic program self-study of the Computer Information Technology program.

The College concurs with the two primary areas of concern voiced by the reviewers regarding the retention rate in the program and the tracking of graduates into employment or for transfer to another institution for data purposes.

The Office of Academics has requested data from Institutional Research to begin the process of further review of the program's retention rates to determine possible causes and responses. Academics will work closely with the CIT faculty to develop strategies and an improvement plan to improve retention in the program. The college also has an active Retention Committee that seeks to improve retention in all college programs.

SAU Tech has instituted several processes for improving the tracking of graduates into employment. The Office of Academics is responsible for contacting students and employers as part of the federal Gainful Employment Disclosure requirements. Graduates are contacted six and twelve months after graduation. Data on graduate employment will improve as this process moves forward.

In addition, the college has become an institutional member of National Student Clearinghouse. The clearinghouse tracks transfer students nation-wide among clearinghouse members. The college is already obtaining valuable data on transfer students as a result of this membership.

Two other concerns were expressed by the external review in the form of recommendations. The first, to increase the use of adjunct faculty to prevent full-time faculty from carrying overloads, will be taken under consideration within college policies. Currently the college allows faculty to carry one overload course and faculty have first choice of available courses before adjuncts are sought. The college attempts to avoid assigning a second overload course to faculty, however; when adjuncts are not available, the faculty may carry a second overload.

The second recommendation from the external reviewer was to begin offering distance education courses in the CIT program. CIT faculty have developed hybrid courses over the last few years but have been reluctant to develop fully on-line courses due to the intense, hands-on, laboratory-based curriculum and content of the program. While there is interest in continuing to develop hybrid courses in which the lecture portion of a course is delivered by distance, the faculty are hesitant to move into full delivery of skills-based networking and computer technician coursework, particularly for second year curriculum.

SAU Tech is pleased with the overall review of the program by the local and external reviewer, as well as the state of the program as revealed by the college's internal self-study.

