

BACHELOR OF APPLIED TECHNOLOGY IN COMPUTER AND INFORMATION TECHNOLOGIES

This program is a Selective Program. Application requirements are included in the description below.

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The Bachelor of Applied Technology Degree (BAT) in Computer and Information Technologies (CIT) prepares students for successful careers in the field of CIT. Coursework is balanced between theoretical and technical competencies associated with the CIT profession to prepare graduates for a number of demands placed on CIT professionals. The degree is designed to prepare students with relevant, technical knowledge of CIT practices, in order to provide solutions for real-world problems and technical support for computer-based information systems. Technology-oriented coursework will form the core requirements for this program, with an emphasis on the application and implementation of current technologies.

The program's objectives include promoting academic development in a number of ways. The program offers a required capstone course that will enhance the educational experience and employment potential for students. The program will also include a strong professional component to develop skills in technical communication, ethics, and group work. Students graduating from the program will be prepared to enter the private sector as well as continue their education in a graduate program.

Bachelor of Applied Technology Requirements

Application Requirements

- A. Demonstrate proficiency in state mandated general knowledge content through approved means; i.e., Texas Success Initiatives (TSI), with program specific exemptions accepted.
- B. Applicants are eligible for admission if they meet one of the following criteria:
 - a. An ACT Composite of 19 (minimum of 16 in all areas) or above (SAT 910 or above).
 - b. Applicants with prior college level coursework must have a minimum cumulative GPA of 2.5 or provide evidence of extenuating circumstances, to the Dean for Math, Science & Bachelor Programs, for waiving the requirement.
 - c. Provisional Acceptance, for students scoring a minimum ACT Composite of 15 (SAT 740 or above) or minimum cumulative GPA of 2.25 may be granted by the Dean for Math, Science & Bachelor Programs upon completion of a personal interview with the prospective applicant.

Degree Completion Requirements

Minimum Completion Requirements

- Complete the appropriate course of study for a Bachelor of Applied Technology program as specified in the College catalog. Developmental or other non-credit coursework does not apply toward graduation requirements.
- South Texas College will accept a maximum of 90 credit hours of applicable course work

transferred from another accredited college or university toward a Bachelor of Applied Technology Degree granted by STC.

- Completion of at least 39 credit hours in 3000 level courses or higher of which at least 18 must be completed at STC;
- Maintain a minimum average of "C" (2.0 GPA) for all courses in the area of specialization and a minimum overall cumulative average of "C" (2.0 GPA in all other courses).
- Pay all debts to the College prior to graduation.

Degree Components

General Education Courses	42
Technical Support Areas-Lower Level	39-41
Required CIT Courses-Upper Level	36
CIT Electives-Upper-Level	3
Total Credit Hours	120-122

Lower Division-Requirements

STC Core Curriculum (42 Credit Hours)

The student is required to take 42 credit hours from the STC Core Curriculum. Students must take MATH 1414 College Algebra to fulfill the Mathematics component of the Core Curriculum.

Students beginning the Bachelor of Applied Technology Program upper-level coursework upon completion of an approved Associate of Applied Science (A.A.S.) degree must complete an additional 27 general education credit hours in order to fulfill the forty-two (42) credit hour general education Core Curriculum required at South Texas College.

Students beginning the Bachelor of Applied Technology Program upper-level coursework after completion of an Associate of Arts or Associate of Science degree will have fulfilled the Core Curriculum requirement for bachelor degree graduates.

Technical Support Areas (39-41 Credit Hours)

The student is required to complete 39-41 credit hours of technical specialty coursework from an approved Associate of Applied Science (A.A.S) degree. The 39-41 credit hours must include 4 of the courses (14-16 credit hours) listed below. The approved A.A.S. degrees are as follows: Information Technology, Architectural and Engineering Design Technology, Business Administration, Administrative Office Assistant, Legal Office Assistant, and Paralegal. Coursework from other A.A.S. degrees will be evaluated on a case by case basis.

ITNW 1425 & ITNW 2421	Fundamentals of Networking Technologies and Networking with TCP/IP	8
or CPMT 1449 & CPMT 2449	Computer Networking Technology and Advanced Computer Networking Technology	
ITSE 1431	Introduction to Visual Basic Programming	3-4
or COSC 1320	C Programming	
ITSE 1411	Beginning Web Page Programming	3-4
or COSC 1315	Introduction to Computer Programming	
Total Credit Hours		14-16

Note: Students entering the BAT program with a completed Associate of Science (A.S.) or Associate

of Arts (A.A.) degree may apply their field of study coursework toward the 25 credit hour technical specialty requirement.

Upper-Division Requirements

Prerequisites for Upper-Level Coursework

- Junior Standing
 - Completion of an Associate of Applied Science (A.A.S.) degree or completion of sixty (60) credit hours from a regionally accredited institution with at least fifteen (15) credit hours in general education coursework; or
 - Completion of an Associate of Arts (A.A.) or Associate of Science (A.S.) degree from a regionally accredited institution.
- Senior Standing
 - A minimum of ninety (90) credit hours from a regionally accredited institution with at least twenty-one (21) credit hours in upper-level coursework.
 - A minimum GPA of 2.5 in previous coursework.

Required Computer & Information Technologies

Major Courses (36 Credit Hours)

The upper-division Computer & Information Technologies major coursework is balanced between theoretical and technical competencies associated with the CIT profession to prepare graduates for a number of demands placed on CIT professionals. The degree is designed to educate and train students with relevant, technical knowledge of CIT practice to provide solutions for real-world problems as well as to provide technical support for computer-based information systems. Technology-oriented coursework with an emphasis on computer application of those technologies will form the core requirements for this program.

CITP 3302	Advanced Networking (Networking +)	3
CITP 3305	System Analysis and Design	3
CITP 3306	Internet/Intranet Server Integration	3
CITP 3310	Survey of Programming Languages	3
CITP 3312	Fundamentals of Information Security	3
CITP 3320	Database Management	3
CITP 4301	Capstone: Computer and Information Technology Internship	3
CITP 4316	Advanced Web Design	3
CITP 4330	Advanced Network Security	3
CITP 4340	Special Topics Course - CIT	3
CITP 4345	Data Communications - Convergent Technologies	3
CITP 4350	Advanced Computer Programming	3
Total Credit Hours		36

Computer and Information Technologies Elective Courses (3 hours)

Select one of the following prescribed elective courses: 3

CITP 3311	Reverse Software Engineering	
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CITP 3360	Digital Image Processing and Presentation	
TMGT 3336	Management and Law	
TMGT 3338	Accounting for Managers	
TMGT 3311	Technology in Enterprise Management	

Total Credit Hours 3

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Through the Bachelor of Applied Technology in Computer and Information Technologies outcomes, the student will be able to:

- **Develop web-based applications.**
 - Design, develop, and secure dynamic and data-driven web applications utilizing server-side technologies and database management. CITP 4316
- **Develop computer networks and convergent technologies.**
 - Analyze and implement networking fundamentals, LAN switching, routing, WAN, and network infrastructure technologies. CITP 3302
 - Install and troubleshoot Linux servers and manage Windows servers using system policies, profiles, security, and performance monitoring. CITP 3306
 - Describe and implement common components of the telecommunications industry, with an emphasis on VoIP. CITP 4345
- **Secure network infrastructures.**
 - Identify, implement, and maintain network security, data defense, access control models, authentication, encryption, hashing, and proper security documentation. CITP 3312
 - Differentiate and implement various security tools in the defense of a computer network and conduct penetration testing. CITP 4330
 - Select and apply reverse software engineering tools to system security, software design, malware analysis. CITP 3311
- **Design and utilize databases.**
 - Manipulate, define, and maintain the components of a relational database, such as records, table structures, schema objects, and security. CITP 3320
- **Develop applications in modern programming languages.**
 - Utilize system design tools, data storage, arithmetic expressions, modular programming, and object-oriented methodologies. CITP 3305
 - Utilize file input/output operations, control structures, and application development. CITP 3310
 - Create a working software product according to required specifications and design documentation and evaluate its intended functionality. CITP 4340
 - Create event-driven applications with graphical user interfaces, databases, and programming methodologies, such as modularity, encapsulation, information hiding, abstraction, and polymorphism. CITP 4350
- **Demonstrate integration of IT skills in a capstone internship.**

- Communicate technical information, apply skills in an internship, and participate in a team project. CITP 4301

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STC Core Curriculum

ENGL 1301	Composition I	3
ENGL 1302	Composition II - Rhetoric	3
MATH 1414	College Algebra	4
HIST 1301	United States History I	3
HIST 1302	United States History II	3
GOVT 2305	Federal Government	3
GOVT 2306	Texas Government	3
Component Area Option - Core Curriculum		3
Life and Physical Sciences Elective - Core Curriculum		4
Life and Physical Sciences Elective - Core Curriculum		4
Creative Arts Elective - Core Curriculum		3
Social and Behavioral Sciences Elective - Core Curriculum		3
Language, Philosophy & Culture Elective - Core Curriculum		3

Technical Specialty Courses

Foundational Courses (Required)

ITNW 1425 & ITNW 2421	Fundamentals of Networking Technologies and Networking with TCP/IP	8
or CPMT 1449 & CPMT 2449	Computer Networking Technology and Advanced Computer Networking Technology	
ITSE 1431	Introduction to Visual Basic Programming	3-4
or COSC 1320	C Programming	
ITSE 1411	Beginning Web Page Programming	3-4
or COSC 1315	Introduction to Computer Programming	

Technical Specialty Courses ¹

Select 25 credit hours of Technical Specialty courses 25

Required Upper-Division Professional Courses

CITP 3302	Advanced Networking (Networking +)	3
CITP 3305	System Analysis and Design	3
CITP 3306	Internet/Intranet Server Integration	3
CITP 3310	Survey of Programming Languages	3
CITP 3312	Fundamentals of Information Security	3
CITP 3320	Database Management	3
CITP 4301	Capstone: Computer and Information Technology Internship	3
CITP 4316	Advanced Web Design	3
CITP 4330	Advanced Network Security	3
CITP 4340	Special Topics Course - CIT	3
CITP 4345	Data Communications - Convergent Technologies	3

CITP 4350	Advanced Computer Programming	3
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Computer and Information Technologies Elective Courses

Select one of the following prescribed elective courses: 3

CITP 3311	Reverse Software Engineering	
CITP 3360	Digital Image Processing and Presentation	
TMGT 3338	Accounting for Managers	
TMGT 3336	Management and Law	
TMGT 3311	Technology in Enterprise Management	

Total Credit Hours 120-122

¹ Students entering the BAT program with a completed A.A. or A.S. degree may apply their Field of Study coursework towards this requirement. Any additional hours needed to complete the 25 credit hours of Technical Specialty coursework should be taken from one of the approved A.A.S. degrees in the following areas: Information Technology, Architectural and Engineering Design Technology, Business Administration, Administrative Office Assistant, Legal Office Assistant, and Paralegal. Coursework from other A.A.S. degrees will be evaluated on a case by case basis.

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Four Year Course Sequence

Course	Title	Credit Hours
Fall Year		
Fall		
ENGL 1301	Composition I	3
HIST 1301	United States History I	3
or HIST 2327	or Mexican-American History I	
Language, Philosophy & Culture Elective - Core Curriculum		3
Component Area Option - Core Curriculum		3
ITNW 1425	Fundamentals of Networking Technologies	4
or CPMT 1449	or Computer Networking Technology	
Credit Hours		16
Spring		
ENGL 1302	Composition II - Rhetoric	3
HIST 1302	United States History II	3
or HIST 2328	or Mexican-American History II	
MATH 1414	College Algebra	4
ITNW 2421	Networking with TCP/IP	4
or CPMT 2449	or Advanced Computer Networking Technology	
Credit Hours		14
Second Year		
Fall		
GOVT 2305	Federal Government	3
Life and Physical Sciences Elective - Core Curriculum		4
Creative Arts Elective - Core Curriculum		3
Technical Specialty course		3
ITSE 1431	Introduction to Visual Basic Programming	3-4
or COSC 1320	or C Programming	
Credit Hours		16-17
Spring		
Social and Behavioral Sciences Elective - Core Curriculum		3
GOVT 2306	Texas Government	3

Life and Physical Sciences Elective - Core Curriculum		4
ITSE 1411 or COSC 1315	Beginning Web Page Programming or Introduction to Computer Programming	3-4
Technical Specialty Course		3
Credit Hours		16-17
Third Year		
Fall		
Technical Specialty course		3
Technical Specialty course		3
Technical Specialty course		3
CITP 3306	Internet/Intranet Server Integration	3
CITP 3305	System Analysis and Design	3
Credit Hours		15
Spring		
CITP 3312	Fundamentals of Information Security	3
CITP 3302	Advanced Networking (Networking +)	3
Technical Specialty course		3
Technical Specialty course		3
Technical Specialty course		4
Credit Hours		16
Fourth Year		
Fall		
CITP 3310	Survey of Programming Languages	3
CITP 4316	Advanced Web Design	3
CITP 3320	Database Management	3
CITP 4345	Data Communications - Convergent Technologies	3
CITP 4350	Advanced Computer Programming	3
Credit Hours		15
Spring		
CITP 4330	Advanced Network Security	3
CITP 4301	Capstone: Computer and Information Technology Internship	3
CITP 4340	Special Topics Course - CIT	3
Computer & Information Technology Elective		3
Credit Hours		12
Total Credit Hours		120-122

List of Computer and Information Technology Electives

CITP 3311	Reverse Software Engineering	3
CITP 3360	Digital Image Processing and Presentation	3
TMGT 3338	Accounting for Managers	3
TMGT 3311	Technology in Enterprise Management	3
TMGT 3336	Management and Law	3