

**Program Map: Computer Science Technology-Cyber Security Option  
Engineering Technology Department, College of Science and Technology**

**Name:**  
**Start Date:**

**SID:**  
**Catalog Date:**

**Advisor:**  
**Expected Graduation Date:**

Freshman	Fall Courses			Spring Courses			Notes	
	Course	Name	Hours	Course	Name	Hours		
	ENGL 1101*	Composition I Pre-requisite: None	3	ENGL 1102*	Composition II Pre-requisite: ENGL 1101	3		*this course is meant to fulfill the Area A requirement **this course is meant to fulfill the Area D requirement  Accumulate maximum of 30 semester hours in your Freshmen Year.
	MATH 1113*	Pre-Calculus Pre-requisite: MATH 1111	3	MATH 2101	Calculus I Pre-requisite: MATH 1113	4		
	HUMN 1201	Critical Thinking & Communication Pre-requisite: None	3	PHYS 1111K**	Introductory Physics I Pre-requisite: MATH 1113	4		
	COST 1103	COST First Year Experience Pre-requisite: None	2	ELET 3101K	Electric Circuit I Pre-requisite: MATH 1113	4		
	CSCI 1130	Computer & its Applications Pre-requisite: None	3					
CSCI 1301	Computer Science I Pre-requisite: MATH 1111	3						
<b>Fall Milestones</b>		<b>Total</b>	<b>Spring Milestones</b>		<b>Total</b>			
Students must take MATH 1113 and CSCI 1301 to prevent delay in graduation		17			15			

Sophomore	Fall Courses			Spring Courses			Notes	
	Course	Name	Hours	Course	Name	Hours		
	MATH 2301*	Discrete Mathematics Pre-requisite: MATH 1113	3	MATH 2111*	Calculus II Pre-requisite: MATH 2101	4		Accumulate maximum of 60 semester hours in your Sophomore Year.
	CSCI 2231K* Area F	Programming Languages Pre-requisite: CSCI 1301	3	ENGT 2101K	Computer Graphics Pre-requisite: MATH 1113	3		
	ELET 3301K	Digital Systems I Pre-requisite: ELET 3101K	4	PHYS 1112K	Introductory Physics II Pre-requisite: PHYS 1111K	4		
	CSCI 2601K	Information Security Fundamentals Pre-requisite: CSCI 1301	3	CSCI 1302	Computer Science II Pre-requisite: CSCI 1301	4		
<b>Fall Milestones</b>		<b>Total</b>	<b>Spring Milestones</b>		<b>Total</b>			
Students must take CSCI 2601K and ELET 3301K to prevent delay in graduation		13			15			

Junior	Fall Courses			Spring Courses			Notes	
	Course	Name	Hours	Course	Name	Hours		
	CSCI 3385K/ CILS 3325	Computer Network & Design/ Data Comm. & Comp. Network Pre-requisite: CSCI 1301 or CSCI 1321	3	CSCI 4010K	Ethical Hacking and Penetration Testing Pre-requisite: CSCI 2601K	4		Accumulate maximum of 90 semester hours in your Junior Year.  Apply for graduation.
	CSCI 3000	Data Structure & Algorithm Pre-requisite: CSCI 1302	3	CSCI 4310	Compiler Construction Pre-requisite: CSCI 3000	3		
	ELET 3411K	Microcontrollers Pre-requisite: ELET 3301K	4	CSCI 4210	Database Management Pre-requisite: CSCI 4110	3		
	Area C Elective	Pre-requisite: Varies	3	ELET 3412K	Cyber Security and Embedded System Pre-requisite: ELET 3411K	4		
	Area C Elective	Pre-requisite: Varies	3					
<b>Fall Milestones</b>		<b>Total</b>	<b>Spring Milestones</b>		<b>Total</b>			
Students must take CSCI 3000, ELET 3411K to prevent delay in graduation.		16			14			

Senior	Fall Courses			Spring Courses			Notes	
	Course	Name	Hours	Course	Name	Hours		
	CSCI 4020K	Mobile Computing Pre-requisite: CSCI 3000	4	CSCI 4622K	Cyber Forensics Pre-requisite: CSCI 4110	4		Does this Degree Program Require a Minor? <b>No</b>  Total Hours Required for this Degree Program: <u>122</u>
	CSCI 4110	Operating System Pre-requisite: CSCI 3000	3	ENGT 4401* Major CSCI Core	Senior Project Pre-requisite: Varies	3		
	Area E Elective	Pre-requisite: Varies	3	AFRS 1501	Survey African American History Pre-requisite: None	2		
	POLS 1101	American Government Pre-requisite: None	3	Area E Elective	Pre-requisite: None	3		
	ELET 4402K	Network Defense and Counter Measures Pre-requisite: CSCI 3385K	4	HIST 2111 or 2112	U.S. History Pre-requisite: None	3		
<b>Fall Milestones</b>		<b>Total</b>	<b>Spring Milestones</b>		<b>Total</b>			
		17			15			

**Program Map: Computer Science Technology-Cyber Security Option**  
**Engineering Technology Department, College of Science and Technology**

**Core Curriculum (Programmed Preferred Options in Bold)**

Area B – Institutional Options 5 hrs

- i. AFRS 1501 Survey of African-American Experience 2 hrs
- ii. HUMN 1201 Critical Thinking & Communication 3 hrs

Area C – Humanities/Fine Arts, and Ethics 6 hrs,

1. Select one of the following:
  - i. ENGL 2111 World Literature I 3 hrs
  - ii. ENGL 2112 World Literature II 3 hrs
  - iii. ENGL 2121 British Literature I 3 hrs
  - iv. ENGL 2122 British Literature II 3 hrs
  - v. ENGL 2131 American Literature I 3 hrs
  - vi. ENGL 2132 American Literature II 3 hrs
  - vii. ENGL 2222 African American Literature 3 hrs
  - viii. PHIL 2010 Introduction to Philosophy 3 hrs
  - ix. PHIL 2030 Introduction to Ethics 3 hrs
2. Select one of the following:
  - i. ARTS 1101 Introduction to Visual Art 3 hrs
  - ii. DNCE 2010 Dance Appreciation 3 hrs
  - iii. ENGL 2521 Introduction to Film 3 hrs
  - iv. HUMN 2011 Humanities 3 hrs
  - v. MUSC 1101 Introduction to Music 3 hrs
  - vi. THEA 2101 Introduction to Theatre 3 hrs

Area D – Natural Sciences, Math & Technology 10 hrs

1. Select one of the following:
  - i. BIOL 1107 Principles of Biology I 3 hrs
  - ii. BIOL 1108 Principles of Biology II 3 hrs
  - iii. CHEM 1211 Principles of Chemistry I 3 hrs
  - iv. CHEM 1212 Principles of Chemistry II 3 hrs
  - v. CISM 1130 Computer Applications 3 hrs
  - vi. CSCI 1130 Computer Applications 3 hrs**
  - vii. CSCI 1301 Computer Science I 3 hrs
  - viii. ENVS 1140 Environmental Issues 3 hrs
2. Select two of the following lab sciences:
  - i. BIOL 1107/1107L Principles of Biology I 4 hrs
  - ii. BIOL 1108/1108L Principles of Biology II 4 hrs
  - iii. CHEM 1211/1211L Principles of Chemistry 4 hrs
  - iv. CHEM 1212/1212L Principles of Chemistry 4 hrs
  - v. PHYS 1111K Introductory Physics I 4 hrs**
  - vi. PHYS 1112K Introductory Physics II 4 hrs**
  - vii. PHYS 2211K Principles of Physics I 4 hrs**
  - viii. PHYS 2212K Principles of Physics II 4 hrs**

Area E – Social Science 12 hrs

- i. POLS 1101 American Government 3 hrs
2. Select one of the following:
  - i. HIST 2111 U.S. History to the Post-Civil War Period 3 hrs
  - ii. HIST 2112 U.S. History from the Post-Civil War to Pre 3 hrs
3. Select two of the following:
  - i. AFRS 2000 Introduction to Africana Studies 3 hrs
  - ii. ANTH 1101 Introduction to Anthropology 3 hrs
  - iii. ECON 2105 Principles of Macro-Economics 3 hrs
  - iv. GEOG 1101 Introduction to Human Geography 3 hrs
  - v. HIST 1111 World Hist to Early Modern Times 3 hrs
  - vi. HIST 1112 World History Early Modern Times to Pres 3 hrs
  - vii. POLS 2401 Global Issues 3 hrs
  - viii. PSYC 1101 Intro to General Psychology 3 hrs
  - ix. PSYC 2103 Human Growth & Development 3 hrs
  - x. SOCI 1101 Introduction to Sociology 3 hrs
  - xi. SOCI 1160 Social Problems 3 hrs

## Computer Science Technology – Cyber Security Option Major

The computer science technology curriculum – cybersecurity track is designed for students interested in pursuing a career in cybersecurity. This track combines the fundamentals of computer science, electronics engineering technology with cybersecurity concepts. Students in this track will assess the trends and impact of current and past actions within the cyber world. Students will become adept at making rationalized digital decisions, evaluating threats, and managing risks in today’s cyber infrastructure. Students in this track will also learn how to apply the tools required to solve problems and mitigate new risks. Students with this track will be marketable and prepared for future-proof employment in areas such as these:

**Information security analyst:** responsible to design and implement security systems to protect an organization’s computer infrastructure from cyber-threats.

**Data security analyst:** responsible to safeguard an organization’s computer systems and networks by developing strategies and maintaining security to ensure that an organization’s networks has no security breach.

**Penetration tester:** is an ethical hacker responsible for testing Information Technology / Operations Technology (IT/OT) systems to identify vulnerabilities using a wide variety of penetration software tools methods and tactics to simulate cyber-attacks.

**Forensic computer analyst:** responsible to investigate computer-related crimes by using forensic tools to recover electronic data/information that serves as legal evidence.

**Cyber security analyst:** responsible to assess, plan and enact security measures to safeguard the privacy, integrity and availability of an organization’s cyber and information assets by preventing compromise (e.g., outside/inside security breaches).

**Security Software Developer:** responsible to implement and develop security software and systems to ensure an organization’s network continuity of operations (i.e., maintains confidentiality, integrity and availability).

### Program of Study –

#### Bachelor of Science in Computer Science Technology

#### Areas A, B, C, D, E, and additional requirements 43 hrs

*MATH 1113 Required in Core Area A*

<b>COST 1103</b>	<b>First Year Experience</b>	<b>2 hrs</b>
<b>*Area F</b>		<b>17 hrs</b>
CSCI 1301	Computer Science I	3 hrs
CSCI 1302	Computer Science II	4 hrs
MATH 2101	Calculus I	4 hrs
MATH 2301	Discrete Mathematics	3 hrs
CSCI 2231K	Programming Languages	3 hrs
<b>*Major Requirements</b>		<b>62 hrs</b>
<i>CSCI Core Courses</i>		<i>18 hrs</i>
CSCI 3000	Data Structures & Algorithm	3 hrs
CSCI 3385K/	Computer Network and Design/	3 hrs
CISM 3325	Data Comm & Comp Network	
CSCI 4110	Operating Systems	3 hrs
CSCI 4210	Database Management	3 hrs
CSCI 4310	Compiler Construction	3 hrs
ENGT 4401	Senior Project	3 hrs
<i>Engineering Technology Core Courses</i>		<i>15 hrs</i>
ENGT 2101K	Computer Graphics	3 hrs
ELET 3101K	Electrical Circuit I	4 hrs
ELET 3301K	Digital Systems I	4 hrs
ELET 3411K	Microcontrollers	4 hrs
<i>Math Core Course</i>		<i>4 hrs</i>
MATH 2111	Calculus II	4 hrs
<i>CSCI Technology/Engineering Technology Option</i>		<i>23 hrs</i>
CSCI 2601K	Info. Security Fundamental	3 hrs
ELET 3412K	Cyber Sec. & Embed Sys.	4 hrs
CSCI 4010K	Ethical Hacking & Penn. Test	4 hrs
CSCI 4020K	Mobile Computing	4 hrs
ELET 4402K	Net. Def. & Counter Measures	4 hrs
CSCI 4622K	Cyber Forensics	4 hrs

Or any approved CSCI, ELET, ENGT or ENGR course by the advisor

**TOTAL 122 hours**

**\*A grade of “C” or better is required**