- 1. College of Science, Technology, Engineering, & Mathematics Department of Engineering and Computing Sciences
 - a. Add COMS 1921: Microsoft Excel, to the course descriptions;
 - b. Add COMS 2323: Programming in Python, to the course descriptions;
 - c. Add COMS 4923: Capstone II, to the course descriptions;
 - d. Add COMS 4931-4933: Internship, to the course descriptions;
 - e. Add CSEC 1003: Introduction to Cybersecurity, to the course descriptions;
 - f. Add CSEC 4931-4933: Internship, to the course descriptions;
 - g. Modify the Curriculum in Bachelor of Science in Computer Science, as follows:
 - (1) Delete the following 13 hours:
 - ELEG 2134: Digital Logic Design, and ELEG 2130: Digital Logic Design Lab; CSEC 2213: Network Forensics and Incident Response; COMS 4063: IT Project Administration; and Elective - 3 hours;
 - (2) Add the following 13 hours:
 CSEC 1003: Introduction to Cybersecurity;
 COMS 2163: Scripting Languages;
 COMS 2323: Programming in Python;
 COMS 4923: Capstone II; and
 3000-4000 Level Elective 1 hour;
 - h. Modify the Curriculum in Bachelor of Science in Cybersecurity, as follows:
 - (1) Delete the following 11 hours:

ELEG 2134: Digital Logic Design, and ELEG 2130: Digital Logic Design Lab; CSEC 2113: Introduction to Information Systems; and 3000-4000 Level Elective - 4 hours; and

- (2) Add 11 hours:
 CSEC 1003: Introduction to Cybersecurity;
 COMS 2323: Programming in Python;
 COMS 3233: Database Design and Implementation; and Elective 2 hours;
- Modify the Curriculum in Bachelor of Science in Information Programming, Database, and Web Track I, and Bachelor of Science in Information Technology Network and Security Track II, as follows:

Track I (Programming, Database, and Web):

- (1) Delete the following 9 hours:
 CSEC 2213: Network Forensics and Incident Response;
 COMS 4063: IT Project Administration;
 Elective 3 hours; and
- (2) Add the following 9 hours:
 CSEC 1003: Introduction to Cybersecurity;
 COMS 2323: Programming in Python; and
 COMS 4923: Capstone II; and

Track II (Network and Security) changes

- Delete the following 6 hours: COMS 4063: IT Project Administration; and Elective - 3 hours; and
- (2) Add the following 6 hours:CSEC 1003: Introduction to Cybersecurity;COMS 4923: Capstone II; and
- (3) Change "COMS 2163: Scripting Languages" to "COMS 2163: Scripting Languages or COMS 2323: Programming in Python" (to allow students a choice between the two courses); and
- j. Modify the Curriculum in Associate of Applied Science in Cybersecurity, as follows:
 - (1) Delete the following 10 hours:
 ELEG 2134: Digital Logic Design, and ELEG 2130: Digital Logic Design Lab; CSEC 2113: Introduction to Information Systems; and
 U.S. History/Government; and
 - (2) Add the following 10 hours:
 CSEC 1003: Introduction to Cybersecurity;
 COMS 2323: Programming in Python; and
 Elective 4 hours; and
- k. Modify the Curriculum in Associate of Applied Science in Information Technology, as follows:
 - Delete the following 3 hours: CSEC 2213: Network Forensics and Incident Response; and
 - (2) Add the following 3 hours: CSEC 1003: Introduction to Cybersecurity; and
- I. Modify the Curriculum in Certificate of Proficiency in Computer Networking, as follows:
 - Change program to require ONE of: CSEC 1213 Wireless and Cellular Security or COMS 2703: Computer Hardware and Architecture (certificate currently requires both courses); and
 - (2) Add CSEC 2213: Network Forensics and Incident Response.
- 2. College of Science, Technology, Engineering, & Mathematics Department of Physical & Earth Sciences
 - a. Add PHYS 4061: Engineering Physics Design, to the course descriptions;
 - b. Modify the Curriculum in Engineering Physics, as follows:
 - (1) Delete the following courses:

MCEG 1002: Engineering Graphics;

4 hours of ELEG/MCEG/COMS (3000-4000 level) electives; and

PHYS 4951: Undergraduate Research in Physics; and

(2) Add the following courses:

COMS 2203: Programming II; and

COMS 2323: Programming in Python;

- PHYS 4061: Engineering Physics Design; and
- c. Modify the Curriculum in Physics, as follows:
 - (1) Delete the following courses:

STAT 2304: Programming Languages for Data Science;

- 3 hours of Electives; and
- 3 hours of Upper Division Electives; and
- (2) Add the following courses:

COMS 2203: Programming II;

COMS 2323: Programming in Python;

STAT 3153: Applied Statistics; and

1 hours of Elective.



REQUEST FOR COURSE ADDITION

Department Initiating Proposal	Date
Engineering and Computing Sciences	

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cronk	12/1/2022
Assessment	In moto	12/5/22
Registrar	Sammylueauen	1/3/23
Graduate Dean (Graduate Proposals Only)	0	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Course Subject: (e.g., ACCT, ENGL)	Course Number: (e.g., 1003)	Effective Term:
COMS	1921	C Spring 🖲 Summer I
Official Catalog Title: (If official title e	xceeds 30 characters, indicate Banne	r Title below)
Microsoft Excel		

Banner Title: (limited to 30 characters, including spaces, capitalize all letters — this will display on the transcript)	
MICROSOFT EXCEL	

Will this	course be cross-list	ed with another existing cou	se? If so, list course subject and number.
C Yes (• No		
Will this	course be cross-list	ed with a course currently no	t in the undergraduate or graduate catalog?
If so list	course subject and	No Yes No	
Is this co	urse repeatable for	additional earned hours?	C Vac @ Na How many total hours?
13 1113 00		additional earned nours:	
Grading:	Standard Let	ter CP/F	Other
Mode of	Instruction (check a	appropriate box):	
C 01 Lec	ture	O2 Lecture/Laboratory	C 03 Laboratory only
C 05 Pra	ctice Teaching	C 06 Internship/Practicum	C 07 Apprenticeship/Externship
(08 Ind	ependent Study	○ 09 Readings	C 10 Special Topics
🗘 12 Ind	ividual Lessons	C 13 Applied Instruction	C 16 Studio Course
🕻 17 Dis	sertation	18 Activity Course	C 19 Seminar C 98 Other
Does this	s course require a fe	ee? Cyes 🕫 No How	Much? Select Fee Type
If selecte	ed other list fee type	:: [
Electiv	ve	☐ Major	☐ Minor
(If major program	or minor course, yc .)	ou must complete the Reques	t for Program Change form to add course to
If course	is required by majo	or/minor, how frequently will	course be offered?
n/a			
Will this software	course require any , distance learning e	special resources such as unu equipment, etc.? no	sual maintenance costs, library resources, special
Will this	course require a spo	ecial classroom (computer lal	o, smart classroom, or laboratory)?
Compute	er lab		
Answer t	the following Assess	ment questions:	
a. I	f this course is man	dated by an accrediting or ce	rtifying agency, include the directive. If not, state
b I	f this course is requ	ired for the major or minor (complete the following n/a
6. 1	1. Provide the	program level learning outco	me(s) it addresses.
	2. Provide tool	or measure directly linked to	each program learning outcome. (How will stude
	learning in t	his outcome be measured?)	energeningening och Generalist in Generalistik in einsteller sonsteller Generalistik in einer sonsteller sonst
c. \	What is the rational	e for adding this course? What	at evidence demonstrates this need? Employers
	often ask for skills i	n Excel. The goal of this cour	se is to prepare students to pass the Microsoft
1	Excel: Associate cer	tification exam.	

For the proposed course, attach a syllabus in Word format that includes: (Items a. through d. should be entered as they should appear in the catalog)

- a. Course subject
- b. Course number
- c. Catalog course title
- d. Catalog description
 - 1. Arkansas Course Transfer System (ACTS) course number, if applicable
 - 2. Cross-listing
 - 3. Offered (e.g., Fall only, Spring only. Do not enter if offer course fall and spring)
 - 4. Prerequisites
 - 5. Co-requisites
 - 6. Description
 - 7. Notes (e.g., information not in description such as course may be repeated for credit)
 - 8. Contact Hours if different than lecture (e.g., Lecture three hours, laboratory three hours)
 - 9. Fees (e.g., \$36 art fee)
- e. Section for Name of instructor, office hours, contact information (telephone, email)
- f. Text required for course
- g. Bibliography (supplemental reading list)
- h. Justification/rationale for the course
- i. Course objectives
- j. Description of how course meets general education objectives (courses included in the general education component should show how the course meets one or more of the objectives contained in General Education Objectives listed in undergraduate catalog)
- k. Assessment methods (include grading policy with specific equivalents for A, B, C)
- I. Policy on absences, cheating, plagiarism, etc.
- m. Course content (outline of material to be covered in course).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

n/a



INSTRUCTOR CONTACT INFORMATION

Instructor: Mrs. Rebecca (Becky) Cunningham Webex meeting room: <u>https://atu.webex.com/meet/rcunningham</u> Email: <u>rcunningham@atu.edu</u> Office location: Corley 248 Office phone: 479.880.4610 Expect an email response or returned phone call within 24 hours (except on weekends).

Office Hours

9-10 MWF In person		Available in my office COR 248, in the Webex meeting
11-12 MWF	or virtual	room, by email, or by phone

Other times by appointment; please allow 24-hour notice when requesting appointment

COURSE DESCRIPTION

Preparation to pass the Microsoft Office Specialist: Excel Associate Certification exam. Topics covered include creating and managing worksheets and workbooks, creating cells and ranges, creating tables, applying formulas and functions and creating charts and objects.

Credit for this course may be awarded to any student who has already obtained the MOS: Excel Associate certification.

COURSE OBJECTIVES

- Manage worksheets and workbooks
- Manage data cells and ranges
- Manage tables and table data
- Perform operations by using formulas and functions
- Manage charts

TEXTBOOK/SOFTWARE REQUIREMENTS & BIBLIOGRAPHY

Cengage Unlimited required, due to embedded electronic projects. Options:

- 1-semester access (4 months) / 9780357700037 / \$119.99
- 1-year access (12 months) / 9780357700044 / \$179.99
- 2-year access (24 months) / 9780357700051 / \$239.99

Actual book that will be utilized:

COURSE CONTENT

Module 1: Creating a Worksheet and a Chart Module 2: Formulas, Functions, and Formatting Module 3: Working with Large Worksheets, Charting, and What-If Analysis Supplementary certification exam preparation material

ASSESSMENT METHODS

Grades will be calculated on a total point basis. At any point during the course, simply divide your earned points by the points possible to calculate your current grade. (NOTE: Blackboard should do this for you.)

The traditional grading scale will be used to determine final grades:

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

NOTE: Submitted assignments/exams in this course may be used to assess aspects of the course and/or the department and may be viewed by other faculty and/or members of an accreditation team. All such use will preserve the student's anonymity.

Any questions concerning your grade need to be voiced as soon as possible.

POLICIES

Course policies align with the most recent version of the Student Handbook, which can be found at: https://www.atu.edu/studenthandbook/StudentHandbook-2020-ada.pdf

1. ATTENDANCE

During the first week of class, you must complete the Federal Initial Attendance and Participation Module to be considered as "actively participating" in the course. You may retake the assignment as often as you need to make 100%. Failure to make a 100% may result in being marked as "non-attended."

Since this class is online, there is no in-person attendance requirement.

2. COURSE ACTIVITIES / DUE DATES

Assignments should be completed on time or may receive a late penalty.

3. STUDENT ACCOMMODATIONS

A student must be registered with Disability Services in order to qualify for special accommodations. (Registration must occur each semester; it doesn't carry over.) In addition, you should make contact with the instructor to determine which specific accommodations would be appropriate for this particular course.

4. FAIRNESS

Every effort will be made to ensure that all students are treated equally and fairly. That being said, special treatment may be awarded for extenuating circumstances if sought in advance and some students may qualify for special services. If you ever feel that you are being treated unequally, please discuss with your instructor.

Related University Policy: http://www.atu.edu/titleix/index.php

5. ACADEMIC INTEGRITY

You are expected to do your own work. (That means you actually sit in front of the computer and do the typing/clicking.) Any sharing of computer files is considered cheating, and all parties involved will be dealt with harshly. You may find that one cheating instance may haunt you for the rest of your college career, and in some cases, even beyond that. Don't risk it!

Students who violate the Code of Academic Integrity (cheating, plagiarism, etc.) face penalties ranging from being required to redo the assignment (i.e., properly cite sources in cases of plagiarism) to failure of the assignment and/or class. The sanction is dependent on the severity of the violation as well as the number of times a student has violated the policy in the class. Egregious or multiple violations may result in additional university level sanctions.



REQUEST FOR COURSE ADDITION

Department Initiating Proposal	Date
Engineering and Computing Sciences	6-20-2022

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cronk	12/1/2022
Assessment	Chul aus to	12/5/22
Registrar	Jemmyweaner	1/3/23
Graduate Dean (Graduate Proposals Only)	0	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Course Subject: (e.g., ACCT, ENGL)	Course Number: (e.g., 1003)	Effective Term:	
COMS	2323	C Spring 🖲 Summer I	
Official Catalog Title: (If official title e	xceeds 30 characters, indicate Banne	r Title below)	

Programming in Python

Banner Title: (limited to 30 characters, including spaces, capitalize all letters — this will display on the transcript)

PROGRAMMING IN PYTHON

Will this course be cross-liste	ed with another existing cour	se? If so, list course subject and number.
C Yes C No		
Will this course be cross-liste	ed with a course currently no	t in the undergraduate or graduate catalog?
If so, list course subject and	number. 🗘 Yes No	
Is this course repeatable for	additional earned hours?	C Yes No How many total hours?
Grading: 📀 Standard Let	ter CP/F	C Other
Mode of Instruction (check a	appropriate box):	
C 01 Lecture	O2 Lecture/Laboratory	C 03 Laboratory only
○ 05 Practice Teaching	C 06 Internship/Practicum	C 07 Apprentices hip/Externs hip
C 08 Independent Study	O9 Readings	C 10 Special Topics
C 12 Individual Lessons	€ 13 Applied Instruction	C 16 Studio Course
17 Dissertation	C 18 Activity Course	C 19 Seminar C 98 Other
Does this course require a fe	e? CYes 🖲 No How	Much? Select Fee Type
If selected other list fee type		
Elective	Major	☐ Minor
(If major or minor course, yc program.)	ou must complete the Reques	t for Program Change form to add course to
If course is required by majo	r/minor, how frequently will	course be offered?
Course will be offered each f	all semester	
Will this course require any s	special resources such as unu	sual maintenance costs, library resources, special
software, distance learning e	equipment, etc.? No	
Will this course require a spe	acial classroom (computer lat	smart classroom, or laboratory/2
No		
Answer the following Assess	ment questions:	
a. If this course is man	dated by an accrediting or ce	rtifying agency, include the directive. If not, state
not applicable.		
b. If this course is requ	ired for the major or minor, o	complete the following.
1. Provide the	program level learning outco	me(s) it addresses.
2. Provide tool	or measure directly linked to	each program learning outcome. (How will student
learning in t	his outcome be measured?)	This course doesn't directly support a program
outcome bu	t instead the skills learned a	re needed to be successful in other courses which
use this clas	s as a prerequisite.	
c. What is the rational	e for adding this course? What	at evidence demonstrates this need?

Many upper division courses use the python programming language for various purposes. Therefore, students need exposure to this language before enrolling into those courses to improve student outcomes. For the proposed course, attach a syllabus in Word format that includes: (Items a. through d. should be entered as they should appear in the catalog)

- a. Course subject
- b. Course number
- c. Catalog course title
- d. Catalog description
 - 1. Arkansas Course Transfer System (ACTS) course number, if applicable
 - 2. Cross-listing
 - 3. Offered (e.g., Fall only, Spring only. Do not enter if offer course fall and spring)
 - 4. Prerequisites
 - 5. Co-requisites
 - 6. Description
 - 7. Notes (e.g., information not in description such as course may be repeated for credit)
 - 8. Contact Hours if different than lecture (e.g., Lecture three hours, laboratory three hours)
 - 9. Fees (e.g., \$36 art fee)
- e. Section for Name of instructor, office hours, contact information (telephone, email)
- f. Text required for course
- g. Bibliography (supplemental reading list)
- h. Justification/rationale for the course
- i. Course objectives
- j. Description of how course meets general education objectives (courses included in the general education component should show how the course meets one or more of the objectives contained in General Education Objectives listed in undergraduate catalog)
- k. Assessment methods (include grading policy with specific equivalents for A, B, C)
- I. Policy on absences, cheating, plagiarism, etc.
- m. Course content (outline of material to be covered in course).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

COMS 2323 Programming in Python

Course Description:

Introduction to the Python programming language where students will learn the basics through advanced concepts including basic data types, control structures, regular expressions, input/output, and textual analysis.

Prerequisite:

COMS 2203 Programming Fundamentals II (NOTE: This prereq course is undergoing a name change; this is the new name)

Textbook:



Title: Fundamentals of Python: First Programs

Author: Kenneth A. Lambert

ISBN: 9780357687758

Course Rationale/Justification:

This course is an introduction to the Python programming language. The purpose of the course is to prepare students for building scripts that control a sequence of program steps such as those used in developing testing and deploying software.

Course Objectives:

- Design, code, and test applications using Python scripts
- Demonstrate the basic techniques used to create scripts for automating system administrative task

- Demonstrate the use of regular expressions in processing text
- Demonstrate the use of Python to manage applications using networking
- Control the keyboard and mouse with GUI automation

Attendance:

Programming classes are cumulative. If you miss class regularly, then you will get behind and become lost. Therefore, please attend class regularly.

Students with Disabilities:

If you have any disability that requires special needs for this class, please see me, and I will accommodate you in any way I can.

The ATU Statement of Students and Disabilities policy can be located by navigating to the below link:

http://www.atu.edu/disabilities/index.php

University Academic Integrity Policy:

The ATU Academic Integrity Policy can be located by navigating to the below link:

https://www.atu.edu/academic-integrity/

Statement of Non-Discrimination and Access can be found below:

The ATU Statement of Non-Discrimination and Access policy can be located by navigating to the below link:

http://www.atu.edu/titleix/index.php

COVID-19 Policy:

The ATU COVID-19 Policy can be located by navigating to the below link:

https://www.atu.edu/pandemicrecovery/managementplan.php



REQUEST FOR COURSE ADDITION

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/2022

Title	Signature	Date
Department Head	Ochie I. Kichie	
Dr. John Krohn	John L. Mohn	12/1/2022
Dean	0 1 1	
Dr. Judy Cezeaux	Jury & Cyrix	12/1/2022
Assessment	Chat	12/5/22
Registrar	Jammylucauer	1/3122
Graduate Dean (Graduate Proposals Only)	Û	
Vice President for Academic Affairs		

Committee		Approval Dat
General Education Committee (Unde	ergraduate Proposals Only)	
Teacher Education Committee (Grad	luate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate	Proposals Only)	
Faculty Senate (Undergraduate Proposals (Only)	
Graduate Council (Graduate Proposals Or	ly)	
L Course Subject: (e.g., ACCT, ENGL) COMS	Course Number: (e.g., 1003) 4923	Effective Term:
Official Catalog Title: (If official title e Capstone II	xceeds 30 characters, indicate Banne	Title below)
Banner Title: (limited to 30 characters, i CAPSTONE II	ncluding spaces, capitalize all letters — tl	nis will display on the transcript)

Will this cou	urse be cross-list	ed with another	existing course? If	so, list course	subject and number.
CYes IN	No				
Will this cou	urse be cross-list	ed with a course	currently not in th	ne undergradu	ate or graduate catalog?
f so, list cou	urse subject and	number. C Yes	s No		
s this cours	e repeatable for	additional earne	ed hours?	res 🖲 No Ho	ow many total hours?
Grading:	Standard Let	tter	P/F	C Other	
Mode of Ins	struction (check	appropriate box)			
01 Lecture	à	C 02 Lecture/L	aboratory 🤇	03 Laboratory o	only
C 05 Practic	e Teaching	🕻 06 Internshi	p/Practicum 🌔	07 Apprentices	hip/Externship
🗘 08 Indepe	endent Study	C 09 Readings	C	10 Special Top	ics
🗘 12 Individ	lual Lessons	C 13 Applied I	nstruction C	16 Studio Cour	se
C 17 Disser	tation	C 18 Activity Co	ourse C	19 Seminar	C 98 Other
Does this co	ourse require a fe	ee? C Yes	No How Muc	h?	Select Fee Type
f selected c	other list fee type	e:			
program.)	minor course, yo	ou must complet	e the Request for	Program Chan	ge form to add course to
f course is r Every seme	minor course, yo required by majo rster	ou must complet	e the Request for equently will cours	Program Chan	ge form to add course to
f course is i Every seme Will this cou software, di	minor course, yo required by majo ster urse require any istance learning	ou must complet or/minor, how fre special resources equipment, etc.?	e the Request for equently will cours s such as unusual r no	Program Chan e be offered? naintenance c	ge form to add course to osts, library resources, special
Will this course of Will this course difference of the second sec	minor course, yo required by majo ster urse require any istance learning urse require a sp	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (e the Request for equently will cours s such as unusual n no computer lab, sma	Program Chan e be offered? maintenance c art classroom,	ge form to add course to osts, library resources, special or laboratory)? no
if course is i Every seme Will this cou software, di Will this cou	minor course, yo required by majo ster urse require any istance learning urse require a sp following Assess	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (sment questions:	e the Request for equently will cours s such as unusual n no computer lab, sma	Program Chan e be offered? maintenance c art classroom,	ge form to add course to osts, library resources, special or laboratory)? no
if course is i Every seme Will this cou software, di Will this cou Answer the a. If th not	minor course, yo required by majo ster urse require any istance learning urse require a sp following Assess his course is man applicable. n/a	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: idated by an accr	e the Request for equently will cours s such as unusual n no computer lab, sma	Program Chan e be offered? maintenance c art classroom, g agency, inclu	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state
if rogram.) If course is i Every seme Will this cou software, di Will this cou Answer the a. If th not b. If th	minor course, yo required by majo ster urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: idated by an accr	e the Request for equently will cours s such as unusual i no computer lab, sma editing or certifyir	Program Chan e be offered? naintenance c art classroom, og agency, inclu ete the follow	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing.
if course is a Every seme Will this cou software, di Will this cou Answer the a. If th not b. If th	minor course, yo required by majo ster urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ 1. Provide the	ou must complet pr/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: idated by an accr uired for the majo program level le	e the Request for equently will cours s such as unusual n no computer lab, sma editing or certifyir or or minor, compl arning outcome(s)	Program Chan e be offered? maintenance c art classroom, g agency, inclu- ete the follow <u>it addresses</u> .	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing. This course will be used to
if fourse is i Every seme Will this cou- software, di Will this cou- Answer the a. If th not b. If th	minor course, yo required by majo ster urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ 1. Provide the assess Outo	ou must complet pr/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: idated by an accr uired for the majo program level le comes 3 and 5 (Co	e the Request for equently will cours s such as unusual n no computer lab, sma editing or certifyir or or minor, compl arning outcome(s) ommunication an	Program Chan e be offered? maintenance c art classroom, g agency, inclu- ete the follow <u>it addresses</u> . d Teams)	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing. This course will be used to
if course is i Every seme Will this cou software, di Will this cou Answer the a. If th not b. If th	minor course, yo required by majo ster urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ 1. Provide the assess Outo 2. Provide too learning in t	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: idated by an accr uired for the majo program level le comes 3 and 5 (Co l or measure dire	e the Request for equently will cours s such as unusual in no computer lab, sma editing or certifyir or or minor, compl arning outcome(s) ommunication an ectly linked to each measured?)	Program Chan e be offered? maintenance c art classroom, og agency, inclu ete the follow <u>it addresses</u> . d Teams) n program learn	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing. This course will be used to ning outcome. (How will studen
if course is i Every seme Will this cou software, di Will this cou Answer the a. If th not b. If th	minor course, yo required by majo ester urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ 1. Provide the assess Outo 2. Provide too learning in t i. Out	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: idated by an accr irred for the majo <u>program level le</u> comes 3 and 5 (C l or measure dire this outcome be in ticome 3 – The stu	e the Request for equently will cours s such as unusual in no computer lab, sma editing or certifyir or or minor, compl arning outcome(s) ommunication an ectly linked to each measured?) udent will give an	Program Chan e be offered? maintenance c art classroom, g agency, inclu- ete the follow <u>it addresses</u> . d Teams) n program learn oral presentat	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing. This course will be used to ning outcome. (How will studen tion of their final capstone
if course is i Every seme Will this cou software, di Will this cou Answer the a. If th not b. If th	minor course, yo required by majo ster urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ 1. Provide the assess Outo 2. Provide too learning in t i. Out pro	ou must complet or/minor, how free special resources equipment, etc.? ecial classroom (sment questions: idated by an accr irred for the major program level le comes 3 and 5 (Co l or measure direct this outcome be in come 3 – The stu	e the Request for equently will cours s such as unusual in no computer lab, sma editing or certifyin or or minor, compl arning outcome(s) ommunication an ectly linked to each measured?) udent will give an	Program Chan e be offered? maintenance c art classroom, ag agency, inclu- ete the follow <u>it addresses</u> . d Teams) a program learn oral presentat	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing. This course will be used to ning outcome. (How will studen tion of their final capstone
if course is i Every seme Will this cou software, di Will this cou Answer the a. If th not b. If th	minor course, yo required by majo ester urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ 1. Provide the assess Outo 2. Provide too learning in t i. Out proj ii. Out	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: dated by an accr dired for the majo <u>program level le</u> comes 3 and 5 (C l or measure direct this outcome be not come 3 – The stu ject	e the Request for equently will cours s such as unusual in no computer lab, sma editing or certifyir or or minor, compl arning outcome(s) ommunication an ectly linked to each measured?) udent will give an	Program Chan e be offered? maintenance c art classroom, og agency, inclu ete the follow <u>it addresses</u> . d Teams) n program learn oral presentat	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing. This course will be used to ning outcome. (How will studen tion of their final capstone roject as part of a team; they
frogram.) If course is i Every seme Will this cou- software, di Will this cou- Answer the a. If th not b. If th	minor course, yo required by majo ester urse require any istance learning urse require a sp following Assess his course is man applicable. n/a his course is requ 1. Provide the assess Outo 2. Provide too learning in t i. Out proj ii. Out will at is the rational	ou must complet or/minor, how fre special resources equipment, etc.? ecial classroom (sment questions: idated by an accr irred for the majo <u>program level le</u> comes 3 and 5 (C l or measure direct this outcome be in this outcome be in the assessed on the stu- be assessed on the stu-	e the Request for equently will cours s such as unusual in no computer lab, sma editing or certifyir or or minor, comple arning outcome(s) ommunication an ectly linked to each measured?) udent will give an udent will give an udent will develop how they contribu	Program Chan e be offered? maintenance c art classroom, g agency, inclu ete the follow it addresses. d Teams) program lear oral presentat o a capstone pu ited to the tea dence demons	ge form to add course to osts, library resources, special or laboratory)? no ude the directive. If not, state ing. This course will be used to ning outcome. (How will studen tion of their final capstone roject as part of a team; they im

document, and present a complete working project/system. Adding a capstone sequence will produce much better projects and simulate a real-world environment.

For the proposed course, attach a syllabus in Word format that includes: (Items a. through d. should be entered as they should appear in the catalog)

- a. Course subject
- b. Course number
- c. Catalog course title
- d. Catalog description
 - 1. Arkansas Course Transfer System (ACTS) course number, if applicable
 - 2. Cross-listing
 - 3. Offered (e.g., Fall only, Spring only. Do not enter if offer course fall and spring)
 - 4. Prerequisites
 - 5. Co-requisites
 - 6. Description
 - 7. Notes (e.g., information not in description such as course may be repeated for credit)
 - 8. Contact Hours if different than lecture (e.g., Lecture three hours, laboratory three hours)
 - 9. Fees (e.g., \$36 art fee)
- e. Section for Name of instructor, office hours, contact information (telephone, email)
- f. Text required for course
- g. Bibliography (supplemental reading list)
- h. Justification/rationale for the course
- i. Course objectives
- j. Description of how course meets general education objectives (courses included in the general education component should show how the course meets one or more of the objectives contained in General Education Objectives listed in undergraduate catalog)
- k. Assessment methods (include grading policy with specific equivalents for A, B, C)
- I. Policy on absences, cheating, plagiarism, etc.
- m. Course content (outline of material to be covered in course).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.



Department of Engineering and Computing Sciences Fall 2023

INSTRUCTOR CONTACT INFORMATION

Instructor: Mrs. Rebecca (Becky) Cunningham Webex meeting room: <u>https://atu.webex.com/meet/rcunningham</u> Email: <u>rcunningham@atu.edu</u> Office location: Corley 248 Office phone: 479.880.4610 Expect an email response or returned phone call within 24 hours (except on weekends).

Office Hours

9-10 MWF	In person	Available in my office COR 248, in the Webex meeting room, by email, or by
11-12 MWF	or virtual	phone
0.1 1		

Other times by appointment; please allow 24-hour notice when requesting appointment

COURSE DESCRIPTION

Prerequisite: COMS 4913

A continuation of Capstone I with an emphasis on the development, testing, and deployment phase of the project based on the proposal presented in the previous course. Students will work in teams to develop and present their project in a real-world environment.

COURSE OBJECTIVES

- Develop initial beta version of the solution
- Adhere to timeline
- Provide feedback to client and instructor on a weekly basis
- Maintain strong documentation
- Thoroughly test project

TEXTBOOK/SOFTWARE REQUIREMENTS & BIBLIOGRAPHY

none

COURSE CONTENT

The majority of the semester will be spent developing and testing a system (app, website, database, etc) in a team-based environment. Students will also focus on issues surrounding the development of a system, such as ethical considerations, version testing, adding features, and documenting progress.

ASSESSMENT METHODS

Grades will be calculated as follows:

- Proposal: 5%
- Weekly Reports: 15%
- External Evaluation: 5%
- Documentation: 15%
- Presentations: 20%
- Client Evaluation: 10%

NOTE: Submitted assignments/exams in this course may be used to assess aspects of the course and/or the department and may be viewed by other faculty and/or members of an accreditation team. All such use will preserve the student's anonymity.

• Holistic Evaluation of Project: 30% - this will include several criteria such as tools learned, teamwork, comprehensiveness, look and feel of the application developed, etc.

POLICIES

Course policies align with the most recent version of the Student Handbook, which can be found at: <u>https://www.atu.edu/studenthandbook/StudentHandbook-2020-ada.pdf</u>

1. ATTENDANCE

During the first week of class, you must complete the Federal Initial Attendance and Participation Module to be considered as "actively participating" in the course. You may retake the assignment as often as you need to make 100%. Failure to make a 100% may result in being marked as "non-attended."

Since this class is online, there is no in-person attendance requirement.

2. COURSE ACTIVITIES / DUE DATES

Assignments should be completed on time or may receive a late penalty.

3. STUDENT ACCOMMODATIONS

A student must be registered with Disability Services in order to qualify for special accommodations. (Registration must occur each semester; it doesn't carry over.) In addition, you should make contact with the instructor to determine which specific accommodations would be appropriate for this particular course.

Related University Policy: http://www.atu.edu/disabilities/index.php

4. FAIRNESS

Every effort will be made to ensure that all students are treated equally and fairly. That being said, special treatment may be awarded for extenuating circumstances if sought in advance and some students may qualify for special services. If you ever feel that you are being treated unequally, please discuss with your instructor.

Related University Policy: http://www.atu.edu/titleix/index.php

5. ACADEMIC INTEGRITY

You are expected to do your own work. (That means you actually sit in front of the computer and do the typing/clicking.) Any sharing of computer files is considered cheating, and all parties involved will be dealt with harshly. You may find that one cheating instance may haunt you for the rest of your college career, and in some cases, even beyond that. Don't risk it!

Students who violate the Code of Academic Integrity (cheating, plagiarism, etc.) face penalties ranging from being required to redo the assignment (i.e., properly cite sources in cases of plagiarism) to failure of the assignment and/or class. The sanction is dependent on the severity of the violation as well as the number of times a student has violated the policy in the class. Egregious or multiple violations may result in additional university level sanctions.



REQUEST FOR COURSE ADDITION

Department Initiating Proposal	Date
Engineering and Computing Sciences	

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cynx	12/1/2022
Assessment	Mr Mn 2	12/5/22
Registrar	Jammy lucauce	(13/23
Graduate Dean (Graduate Proposals Only)	Û	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Course Subject: (e.g., ACCT, ENGL)	Course Number: (e.g., 1003)	Effective Term:
COMS	4931-4933	Spring 🖲 Summer I
Official Catalog Title: (If official title e	exceeds 30 characters, indicate Banne	r Title below)
Internship	and the second	
Banner Title: (limited to 30 characters,	including spaces, capitalize all letters — t	his will display on the transcript)
INTERNSHIP		

Will this course be cross-liste	d with another existing cour	se? If so, list course	subject and number.
C Yes 🖲 No			
Will this course be cross-liste	d with a course currently no	t in the undergradua	ate or graduate catalog?
If so, list course subject and r	number. 🗘 Yes 🔎 No 📔		
ls this course repeatable for a	additional earned hours?	⊂ Yes ⓒ No Ho	w many total hours?
Grading: 📀 Standard Lett	er CP/F	C Other	
Mode of Instruction (check a	ppropriate box):		
C 01 Lecture	C 02 Lecture/Laboratory	O3 Laboratory o	nlv
○ 05 Practice Teaching	06 Internship/Practicum	C 07 Apprentices	nip/Externship
C 08 Independent Study	C 09 Readings	C 10 Special Topi	cs
C 12 Individual Lessons	C 13 Applied Instruction	C 16 Studio Cours	e
17 Dissertation	C 18 Activity Course	C 19 Seminar	C 98 Other
Does this course require a fee	? Cyes INO How	Much?	Select Fee Type
If selected other list fee type:			
Elective	☐ Major		
(If major or minor course, yoι program.)	I must complete the Request	t for Program Chang	e form to add course to
If course is required by major,	/minor, how frequently will (course be offered?	
Will this course require any sp software, distance learning ec	pecial resources such as unus quipment, etc.? no	sual maintenance co	sts, library resources, special
Will this course require a spec	ial classroom (computer lab	, smart classroom, o	r laboratory)? no
Answer the following Assessm	ent questions:		
a. If this course is manda	ated by an accrediting or cer	tifying agency, incluc	de the directive. If not, state
b. If this course is require	ed for the major or minor or	mplete the followin	a n/a
1. Provide the p	rogram level learning outcon	ne(s) it addresses.	5. 11/a
2. Provide tool o	r measure directly linked to	each program learni	ng outcome. (How will student
learning in thi	s outcome be measured?)		www. HTML ALL LUCKER ADDRESS!
c. What is the rationale i	for adding this course? What	evidence demonstr	ates this need? We encourage
what they are learning	internships because they have	ve many benefits, su	ch as helping students link
their "foot in the door	" which can lead to permane	applications of the	s way they can receive upper
division elective credit	for completing an internshi	p.	a may they can receive upper-

For the proposed course, attach a syllabus in Word format that includes: (Items a. through d. should be entered as they should appear in the catalog)

- a. Course subject
- b. Course number
- c. Catalog course title
- d. Catalog description
 - 1. Arkansas Course Transfer System (ACTS) course number, if applicable
 - 2. Cross-listing
 - 3. Offered (e.g., Fall only, Spring only. Do not enter if offer course fall and spring)
 - 4. Prerequisites
 - 5. Co-requisites
 - 6. Description
 - 7. Notes (e.g., information not in description such as course may be repeated for credit)
 - 8. Contact Hours if different than lecture (e.g., Lecture three hours, laboratory three hours)
 - 9. Fees (e.g., \$36 art fee)
- e. Section for Name of instructor, office hours, contact information (telephone, email)
- f. Text required for course
- g. Bibliography (supplemental reading list)
- h. Justification/rationale for the course
- i. Course objectives
- j. Description of how course meets general education objectives (courses included in the general education component should show how the course meets one or more of the objectives contained in General Education Objectives listed in undergraduate catalog)
- k. Assessment methods (include grading policy with specific equivalents for A, B, C)
- I. Policy on absences, cheating, plagiarism, etc.
- m. Course content (outline of material to be covered in course).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

n/a



Department of Engineering and Computing Sciences Fall 2023

INSTRUCTOR CONTACT INFORMATION

Instructor: Mrs. Rebecca (Becky) Cunningham Webex meeting room: <u>https://atu.webex.com/meet/rcunningham</u> Email: <u>rcunningham@atu.edu</u> Office location: Corley 248 Office phone: 479.880.4610 Expect an email response or returned phone call within 24 hours (except on weekends).

Office Hours

9-10 MWF	In person	Available in my office COR 248, in the Webex meeting
11-12 MWF	or virtual	room, by email, or by phone

Other times by appointment; please allow 24-hour notice when requesting appointment

COURSE DESCRIPTION

Prerequisite: Junior standing in a computing or related degree

A supervised, practical experience providing computing majors with hands-on professional experience in a position relating to an area of career interests. The student should secure an approved internship prior to course enrollment. During the internship, the student will submit regular reports regarding their internship experience.

COURSE OBJECTIVES

- Assist the student's development of employer-valued skills such as teamwork, communications and attention to detail.
- Expose the student to the environment and expectations of performance on the part of an information technology professional in a professional setting.
- Enhance and/or expand the student's knowledge of a particular area(s) of computing.
- Meet professional role models and potential mentors who can provide guidance, feedback, and support.
- Expand network of professional relationships and contacts.
- Develop a solid work ethic and professional demeanor, as well as a commitment to ethical conduct and social responsibility.

none

COURSE OUTLINE

Internship Proposal: During the first week of the semester, the student will submit a proposal through Blackboard providing details of their internship goals and how you plan to meet them.

Progress Reports: At the end of each week, the student will submit a weekly progress report through Blackboard. The report will provide any pertinent information regarding the internship progress.

Final Report: During final exam week, but before the final exam day/time, the student will submit a final report providing details of their internship.

ASSESSMENT METHODS

Grades will be calculated on a total point basis. At any point during the course, simply divide your earned points by the points possible to calculate your current grade. (NOTE: Blackboard should do this for you.)

The traditional grading scale will be used to determine final grades:

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

Any questions concerning your grade need to be voiced as soon as possible.

POLICIES

Course policies align with the most recent version of the Student Handbook, which can be found at: https://www.atu.edu/studenthandbook/StudentHandbook-2020-ada.pdf

1. ATTENDANCE

During the first week of class, you must complete the Federal Initial Attendance and Participation Module to be considered as "actively participating" in the course. You may retake the assignment as often as you need to make 100%. Failure to make a 100% may result in being marked as "non-attended."

Since this class is online, there is no in-person attendance requirement.

2. COURSE ACTIVITIES / DUE DATES

Assignments should be completed on time or may receive a late penalty.

3. STUDENT ACCOMMODATIONS

NOTE: Submitted assignments/exams in this course may be used to assess aspects of the course and/or the department and may be viewed by other faculty and/or members of an accreditation team. All such use will preserve the student's anonymity. A student must be registered with Disability Services in order to qualify for special accommodations. (Registration must occur each semester; it doesn't carry over.) In addition, you should make contact with the instructor to determine which specific accommodations would be appropriate for this particular course.

Related University Policy: http://www.atu.edu/disabilities/index.php

4. FAIRNESS

Every effort will be made to ensure that all students are treated equally and fairly. That being said, special treatment may be awarded for extenuating circumstances if sought in advance and some students may qualify for special services. If you ever feel that you are being treated unequally, please discuss with your instructor.

Related University Policy: http://www.atu.edu/titleix/index.php

5. ACADEMIC INTEGRITY

You are expected to do your own work. (That means you actually sit in front of the computer and do the typing/clicking.) Any sharing of computer files is considered cheating, and all parties involved will be dealt with harshly. You may find that one cheating instance may haunt you for the rest of your college career, and in some cases, even beyond that. Don't risk it!

Students who violate the Code of Academic Integrity (cheating, plagiarism, etc.) face penalties ranging from being required to redo the assignment (i.e., properly cite sources in cases of plagiarism) to failure of the assignment and/or class. The sanction is dependent on the severity of the violation as well as the number of times a student has violated the policy in the class. Egregious or multiple violations may result in additional university level sanctions.



REQUEST FOR COURSE ADDITION

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/22

Title	Signature	Date
Department Head	Oaky I Krahy	
Dr. John Krohn	John L. Rionn	12/1/2022
Dean	0 1 1	
Dr. Judy Cezeaux	Juny & Cyric	12/1/2022
Assessment	N MA 1-	12/2
	and and	12/5/22
Registrar	in a	
	Janny wearly	1/3/23
Graduate Dean (Graduate Proposals Only)	0	
Vice President for Academic Affairs		

Approval Date

Course Subject: (e.g., ACCT, ENGL)	Course Number: (e.g., 1003) 1003	Effective Term:	
CSEC		C Spring G Summer I	
Official Catalog Title: (If official title e	xceeds 30 characters, indicate Banne	r Title below)	
Introduction to Cybersecurity			
Banner Title: (limited to 30 characters, INTRODUCTION TO CYBERSECURITY	ncluding spaces, capitalize all letters — t	his will display on the transcript)	

C Yes G N	sted with another existing cot	irse? If so, list course sub	ject and number.
Yes Ve No			
Will this course be cross-lis	sted with a course currently n	ot in the undergraduate of	or graduate catalog?
If so, list course subject and	d number. 🔍 Yes 🔎 No 🗍		
Is this course repeatable fo	or additional earned hours?	⊂ Yes 闷 No How m	nany total hours?
Grading: 🕟 Standard Le	etter CP/F	C Other	
Mode of Instruction (check	appropriate box):		
• 01 Lecture	C 02 Lecture/Laboratory	C 03 Laboratory only	
○ 05 Practice Teaching	○ 06 Internship/Practicum	C 07 Apprenticeship/	Externship
C 08 Independent Study	C 09 Readings	C 10 Special Topics	
C 12 Individual Lessons	13 Applied Instruction	C 16 Studio Course	
C 17 Dissertation	18 Activity Course	C 19 Seminar	C 98 Other
Does this course require a f	fee? CYes @ No How	w Much? S	elect Fee Type
If selected other list fee typ	be:		
□ Elective	Major	☐ Minor	
(If major or minor course, y	ou must complete the Reque	st for Program Change fo	rm to add course to
program.)		5	
If course is required by maj	or/minor, how frequently wil	course be offered?	N
If course is required by maj Each Fall/Spring	or/minor, how frequently wil	course be offered?	
If course is required by maj Each Fall/Spring Will this course require any software, distance learning	or/minor, how frequently wil special resources such as une	course be offered?	library resources, specia
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No	or/minor, how frequently wil special resources such as une equipment, etc.?	course be offered?	library resources, specia
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp	or/minor, how frequently wil special resources such as un equipment, etc.? pecial classroom (computer la	l course be offered? usual maintenance costs, b, smart classroom, or lal	library resources, specia poratory)?
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess	or/minor, how frequently wil special resources such as un equipment, etc.? pecial classroom (computer la	l course be offered? usual maintenance costs, b, smart classroom, or lal	library resources, specia poratory)?
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess a. If this course is man	or/minor, how frequently wil special resources such as une equipment, etc.? pecial classroom (computer la sment questions:	l course be offered? usual maintenance costs, b, smart classroom, or lab	library resources, specia poratory)?
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess a. If this course is man not applicable.	or/minor, how frequently wil special resources such as une equipment, etc.? pecial classroom (computer la sment questions: ndated by an accrediting or ce	l course be offered? usual maintenance costs, b, smart classroom, or lal ertifying agency, include t	library resources, specia poratory)? he directive. If not, state
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess a. If this course is man not applicable. 1. NSA Center	or/minor, how frequently wil special resources such as un equipment, etc.? becial classroom (computer la sment questions: ndated by an accrediting or ce	l course be offered? usual maintenance costs, b, smart classroom, or lal ertifying agency, include t quired Knowledge Units C	library resources, specia poratory)? he directive. If not, state ybersecurity Foundation
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess a. If this course is man not applicable. 1. NSA Center (CSF) and C	or/minor, how frequently wil special resources such as une equipment, etc.? Decial classroom (computer la sment questions: Indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP)	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C	library resources, specia poratory)? he directive. If not, state ybersecurity Foundation
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess a. If this course is man not applicable. 1. NSA Center (CSF) and Co b. If this course is requ	or/minor, how frequently wil special resources such as une equipment, etc.? becial classroom (computer la sment questions: indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) uired for the major or minor,	l course be offered? usual maintenance costs, b, smart classroom, or lab ertifying agency, include t quired Knowledge Units C complete the following.	library resources, specia poratory)? he directive. If not, state ybersecurity Foundation
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess a. If this course is man not applicable. 1. NSA Center (CSF) and Co b. If this course is requ 1. Provide the	or/minor, how frequently wil special resources such as une equipment, etc.? Decial classroom (computer la sment questions: Indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) uired for the major or minor, or program level learning outco	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. ome(s) it addresses.	library resources, specia poratory)? he directive. If not, state ybersecurity Foundation
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Assess a. If this course is man not applicable. 1. NSA Center (CSF) and C b. If this course is requ 1. Provide the \circ For	or/minor, how frequently wil special resources such as une equipment, etc.? becial classroom (computer la sment questions: indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) uired for the major or minor, <u>program level learning outco</u> each major: Outcome 1 and	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. <u>ome(s) it addresses</u> . Dutcome 2.	library resources, special poratory)? he directive. If not, state ybersecurity Foundation
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Asses a. If this course is man not applicable. 1. NSA Center (CSF) and C b. If this course is requ 1. Provide the o For 2. Provide too	or/minor, how frequently wil special resources such as une equipment, etc.? pecial classroom (computer la sment questions: ndated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) ured for the major or minor, program level learning outco each major: Outcome 1 and of or measure directly linked to	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. ome(s) it addresses. Dutcome 2. o each program learning o	library resources, specia poratory)? he directive. If not, state ybersecurity Foundation putcome. (How will stude
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Asses a. If this course is man not applicable. 1. NSA Center (CSF) and C b. If this course is requ 1. Provide the o For 2. Provide too learning in t	or/minor, how frequently wil special resources such as une equipment, etc.? becial classroom (computer la sment questions: ndated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) uired for the major or minor, program level learning outco each major: Outcome 1 and of or measure directly linked to this outcome be measured?)	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. <u>ome(s) it addresses</u> . Outcome 2. o each program learning o	library resources, special poratory)? he directive. If not, state ybersecurity Foundation putcome. (How will stude
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Asses a. If this course is mar not applicable. 1. NSA Center (CSF) and Co b. If this course is requ 1. Provide the o For 2. Provide too learning in t o Stuu	or/minor, how frequently wil special resources such as une equipment, etc.? becial classroom (computer la sment questions: indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) uired for the major or minor, <u>program level learning outco</u> each major: Outcome 1 and il or measure directly linked to this outcome be measured?) dents will engage in multiple	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. <u>eme(s) it addresses</u> . Outcome 2. o each program learning o assignments in which the	library resources, special poratory)? he directive. If not, state ybersecurity Foundation putcome. (How will stude y will apply the principles
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Asses a. If this course is mar not applicable. 1. NSA Center (CSF) and C b. If this course is requ 1. Provide the o For 2. Provide too learning in t o Stud	or/minor, how frequently wil special resources such as une equipment, etc.? becial classroom (computer la sment questions: indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) ured for the major or minor, program level learning outco each major: Outcome 1 and of or measure directly linked to this outcome be measured?) dents will engage in multiple cussed in the course to examp	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. <u>ome(s) it addresses</u> . Outcome 2. b each program learning of assignments in which the ple organizations. Assess	library resources, specia poratory)? he directive. If not, state ybersecurity Foundation putcome. (How will stude y will apply the principle: nent will be based on
If course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Asses a. If this course is mar not applicable. 1. NSA Center (CSF) and C b. If this course is requ 1. Provide the o For 2. Provide too learning in t o Stud disc fund	or/minor, how frequently wil special resources such as une equipment, etc.? becial classroom (computer la sment questions: indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) uired for the major or minor, <u>program level learning outco</u> each major: Outcome 1 and of or measure directly linked to this outcome be measured?) dents will engage in multiple cussed in the course to examp ctionality and appropriatenes	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. <u>ome(s) it addresses</u> . Outcome 2. De each program learning of assignments in which the ole organizations. Assess s of solution provided fro	library resources, special poratory)? he directive. If not, state ybersecurity Foundations putcome. (How will stude y will apply the principles nent will be based on m among discussed
f course is required by maj Each Fall/Spring Will this course require any software, distance learning No Will this course require a sp No Answer the following Asses a. If this course is mar not applicable. 1. NSA Center (CSF) and Co b. If this course is requ 1. Provide the © For 2. Provide too learning in t © Stud disc fund opti	or/minor, how frequently wil special resources such as une equipment, etc.? becial classroom (computer la sment questions: indated by an accrediting or ce of Academic Excellence – rec ybersecurity Principles (CSP) uired for the major or minor, program level learning outco each major: Outcome 1 and of or measure directly linked to this outcome be measured?) dents will engage in multiple cussed in the course to examp ctionality and appropriateness ions.	l course be offered? usual maintenance costs, b, smart classroom, or lak ertifying agency, include t quired Knowledge Units C complete the following. <u>eme(s) it addresses</u> . Outcome 2. De each program learning of assignments in which the ple organizations. Assess s of solution provided fro	library resources, special poratory)? he directive. If not, state ybersecurity Foundations putcome. (How will stude y will apply the principles nent will be based on m among discussed

 During the process of working through the NSA-CAE process it has become evident that, while the objectives contained in their required Knowledge Units CSF and CSP are covered in the current curriculum, they are scattered across a wide array of courses. It is more appropriate to approach these concepts in a consolidated and introductory fashion to better allow students to integrate more specific knowledge from advanced courses into the overall concepts of the discipline. For the proposed course, attach a syllabus in Word format that includes: (Items a. through d. should be entered as they should appear in the catalog)

- a. Course subject
- b. Course number
- c. Catalog course title
- d. Catalog description
 - 1. Arkansas Course Transfer System (ACTS) course number, if applicable
 - 2. Cross-listing
 - 3. Offered (e.g., Fall only, Spring only. Do not enter if offer course fall and spring)
 - 4. Prerequisites
 - 5. Co-requisites
 - 6. Description
 - 7. Notes (e.g., information not in description such as course may be repeated for credit)
 - 8. Contact Hours if different than lecture (e.g., Lecture three hours, laboratory three hours)
 - 9. Fees (e.g., \$36 art fee)
- e. Section for Name of instructor, office hours, contact information (telephone, email)
- f. Text required for course
- g. Bibliography (supplemental reading list)
- h. Justification/rationale for the course
- i. Course objectives
- j. Description of how course meets general education objectives (courses included in the general education component should show how the course meets one or more of the objectives contained in General Education Objectives listed in undergraduate catalog)
- k. Assessment methods (include grading policy with specific equivalents for A, B, C)
- I. Policy on absences, cheating, plagiarism, etc.
- m. Course content (outline of material to be covered in course).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

Course Number	CSEC 1003	
Course Name	Introduction to Cybersecurity	
Section	001	
Description	This course introduces general Cybersecurity principles for majors or non-majors. This includes understanding cybersecurity offense and defense, the role of cybersecurity professionals, and legal and ethical principles	
Co-Requisite(s)	None	
Prerequisite(s)	None	
Credit hours	3	
Semester offered	Fall/Spring	
General Education	This course cannot be used to satisfy the general education curriculum.	
New	X	
Core	X	
Major	X	
Courses that satisfy Gen Ed requirements	None	
Faculty who can teach this course	 Mr. Lucas Moody – ABD Cybersecurity and Information Assurance; MS IT Dr. Indira Dutta – Ph.D. Dr. Jerry Wood – Ph.D. Information Assurance Dr. Tolga Ensari – Ph.D. Dr. Robin Ghosh – Ph.D. Dr. Bhaskar Ghosh – Ph.D. 	
Distance Ed class	No	

Syllabus Department of Computer & Information Science

CSEC 1003	Introduction 1	Introduction to Cybersecurity		
Section #	001	001		
OFFERED	Fall/Spring	Fall/Spring		
PRE-REQUISITE	None			
CO-REQUISITES	None			
DESCRIPTION	This course in majors. This ir role of cybers	This course introduces general cybersecurity principles for majors or non- majors. This includes understanding cybersecurity offense and defense, the role of cybersecurity professionals, and legal and ethical principles		or non- ense, the
ACTS Number	CSEC 1310			
NOTES	None			
COURSE	Office:	Phone:	Email:	
INSTRUCTOR	To be determined by the faculty of record for this course			
OFFICE HOURS	To be determined by the faculty of record for this course			
ТЕХТВООК	Principles of Information Security, 7 th Ed., Michael Whitman and Herbert Mattord, ISBN: 978-0357506431			
BIBLIOGRAPHY	There is no REQUIRED supplemental reading list for this course.			
JUSTIFICATION	Students of all disciplines should have a solid grounding in the fundamentals of cybersecurity. This will assist students, regardless of major, in implementing security into their professional and personal activities.			

OBJECTIVES After completing this course, the learner will be able to:

- Describe the principles of confidentiality, integrity, and availability.
- Identify risks, threats, attacks, and vulnerabilities related to cybersecurity.
- Explain how cybersecurity professionals use technologies, processes, and procedures.
- Recognize the application of legal and ethical principles related to cybersecurity.

COURSE TOPICS Topics include:

- Threats and adversaries for organizations and individuals
- Basic risk assessment
- Applications of cryptography
- Common security tools and techniques (VPN, IDS, etc.)
- Legal and ethical issues

GENERALThis course does not meet any of the General Education requirements.EDUCATIONREQUIREMENTS

ASSESSMENT The final grade will consist of 100 percentage points, with the following breakdown:

Homework, Labs, &	
Assignments	20%
Exams, including Final Exam	80%
Total	100%

The following percentage table will be used to assign scores:

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

ATTENDANCE	The policy of the University in regard to class absences may be stated as the considered belief that regular class attendance is essential to the maximum growth and development of the student, and that students, in their own interest, are therefore responsible for attending all classes for which they areenrolled.
COURSE	Respect your peers. Students are expected to respect the rights
CONDUCT	Students must conduct themselves in a professional manner, and maintain an atmosphere that does not distract other students from learning. Students whose behavior the instructor deems to be disruptive will be asked to leave. This includes, but is not limited to, cell phones ringing, talking on a cell phoneor text messaging, use of a laptop computer in a distracting manner, consuming food or beverage, and/or having conversations with other studentsthat are not part of the class instruction. If for some reason you feel that one or more of these items are necessary, you must get express permission from the instructor beforehand. A student who is requested to leave will not be excused from missing any class or class activities.
PLAGIARISM & are CHEATING	Refer to the rules set forth in the student handbook. Students expected to do their OWN work. Consider your actions carefully : there will beno tolerance for conduct that even gives the appearance of cheating. Any questions regarding the policy of cheating or conduct in this class should be clarified with the instructor. Cheating will result in a negative score (deductionfrom the final course grade) and will be reported to appropriate governing bodies. A g
	the CIS ethics committee.


REQUEST FOR COURSE ADDITION

Department Initiating Proposal	Date
Engineering and Computing Sciences	

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cynx	12/1/2022
Assessment	Cha Am 2	12/5/22
Registrar	Sommugluearen	1/3/23
Graduate Dean (Graduate Proposals Only)	0	
Vice President for Academic Affairs		

Approval Date

Course Subject: (e.g., ACCT, ENGL)	Course Number: (e.g., 1003)	Effective Term:
CSEC	4931-4933	Spring 🖲 Summer I
Official Catalog Title: (If official title e	xceeds 30 characters, indicate Banne	r Title below)
Cybersecurity Internship		
Banner Title: (limited to 30 characters, i	ncluding spaces, capitalize all letters — t	his will display on the transcript)
CYBERSECURITY INTERNSHIP		

ovill ti			ner existing co		ist course s	abject and number.	
Ye	s 🍽 No						
Will tl	his course be cross-list	ted with a cou	urse currently i	not in the un	dergraduat	e or graduate catalog?	
lf so, l	list course subject and	number.	Yes 🗭 No				
ls this	course repeatable for	additional ea	arned hours?	(Yes	No How	v many total hours?	
Gradiı	ng: 🔎 Standard Let	tter	C P/F	1	C Other		
Mode	e of Instruction (check a	appropriate b	pox):				
C 01 I	Lecture	C 02 Lectur	re/Laboratory	C 03 La	boratorvon	lv	
C 05 I	Practice Teaching	6 06 Interr	nship/Practicum	C 07 Ap	oprenticeshi	p/Externship	
08 1	Independent Study	r 09 Readi	ings	C 10 Sp	ecial Topics	5	
C 12 I	Individual Lessons	C 13 Appli	ed Instruction	C 16 St	udio Course		
C 17 I	Dissertation	C 18 Activit	ty Course	C 19 Se	eminar	C 98 Other	
Does t	this course require a fe	002 C V	INO HO	w Much?		Select Fee Type	
		res ves		ter sereseers in			
fsele	cted other list fee type						
f sele	cted other list fee type	e:	ior	Г Мі	inor		
f sele	cted other list fee type ctive	e: Maj	jor	Гмі	inor		
f sele Elec If maj	cted other list fee type ctive jor or minor course, yo am.)	e: Maj	jor plete the Reque	∏ Mi est for Progra	inor am Change	form to add course to	
f seler F Eler If maj progra	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo	e: Maj Du must comp Dr/minor, how	jor blete the Requir v frequently wi	Est for Progra	inor am Change offered?	form to add course to	
f seler F Elec If maj progra f cour	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo	e: Maj Du must comp pr/minor, how	jor plete the Reque v frequently wi	F Mi est for Progra	inor am Change offered?	form to add course to	1
f select F Elect f maj progra f cour Will th	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s	e: Maj Du must comp or/minor, how	jor plete the Reque v frequently wi rces such as un	☐ Mi est for Progra Il course be o usual mainte	inor am Change offered? enance cos	form to add course to	ecia
f selec F Elec If maj progra f cour Will th softwa	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e	e: Maj Du must comp pr/minor, how special resource equipment, et	jor plete the Reque v frequently wi rces such as un tc.? no	I Mi est for Progra Il course be o usual mainte	inor am Change offered? enance cos	form to add course to ts, library resources, sp	ecia
f select F Elect f maj progra f cour Will th softwa	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e	e: Maj ou must comp or/minor, how special resource equipment, et	jor plete the Reque v frequently wi rces such as un tc.? no	☐ Mi est for Progra Il course be o usual mainte	inor am Change offered? enance cos	form to add course to ts, library resources, sp	ecia
f select F Elect If maj progra f cour Will th softwa Will th	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe	e: Maj ou must comp or/minor, how special resource equipment, ef ecial classroor	jor blete the Reque v frequently wi rces such as un tc.? no m (computer la	I Mi est for Progra Il course be o usual mainte	inor am Change offered? enance cos ssroom, or	form to add course to ts, library resources, sp laboratory)? no	ecia
f select F Elect If maj progra f cour Will th oftwa Will th	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe er the following Assess	e: Maj ou must comp or/minor, how special resource equipment, ef ecial classroor ment questio	jor plete the Reque v frequently wi rces such as un tc.? no m (computer la pns:	I Mi est for Progra Il course be o usual mainte	inor am Change offered? enance cost	form to add course to ts, library resources, sp laboratory)? no	ecia
f selec F Elec If maj progra f cour Will th oftwa Will th Answe a.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe er the following Assess If this course is man	e: Maj bu must comp or/minor, how special resource equipment, et ecial classroor ment question dated by an a	jor blete the Reque v frequently wi rces such as un tc.? no m (computer la bns: accrediting or c	I Mi est for Progra Il course be o usual mainte ab, smart clas	inor am Change offered? enance cost ssroom, or ncy, include	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s	ecia
f seler ✓ Eler If majorogra f cour Will the Oftwa Will the Answe a.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe er the following Assess If this course is mano not applicable. n/a	e: Maj bu must comp br/minor, how special resource ecial classroor ment question dated by an a	jor plete the Reque v frequently wi rces such as un tc.? no m (computer la pns: procrediting or c	I Mi est for Progra Il course be o usual mainte ab, smart clas	inor am Change offered? enance cost ssroom, or ncy, include	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s	ecia
f seler ✓ Eler If maj progra f cour Will th oftwa Will th Answe a. b.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe er the following Assess If this course is mand not applicable. n/a If this course is requi	e: Maj Du must comp or/minor, how special resource equipment, effective ecial classroorce ment question dated by an a ired for the m	jor olete the Reque v frequently wi rces such as un tc.? no m (computer la ons: accrediting or c najor or minor,	I Mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th	inor am Change offered? enance cos ssroom, or ncy, include e following	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a	ecia
f seler ✓ Eler If maj progra f cour Will the Answe a. b.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe er the following Assess If this course is mano not applicable. n/a If this course is requi 1. Provide the j	e: Maj ou must comp or/minor, how special resource equipment, effective ecial classroor ment question dated by an a ired for the m program leve	jor olete the Reque v frequently wi rces such as un tc.? no m (computer la ons: occrediting or c najor or minor, l learning outc	F Mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th ome(s) it ado	inor am Change offered? enance cos ssroom, or ncy, include e following dresses.	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a	ecia
f seler ✓ Eler If majorogra f cour Vill th oftwa Vill th Answe a. b.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe r the following Assess If this course is mand not applicable. n/a If this course is requi 1. Provide the j 2. Provide tool	e: Maj bu must comp bu must comp br/minor, how special resource ecial classroor ment question dated by an a ired for the m program leve or measure of	jor plete the Reque v frequently wi rces such as un tc.? no m (computer la ons: accrediting or c najor or minor, <u>el learning outc</u> directly linked t	I Mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th ome(s) it ado to each progr	inor am Change offered? enance cos ssroom, or ncy, include e following <u>dresses</u> . ram learnin	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a	ecia
f seler ✓ Eler If maj progra f cour Will th oftwa Will th Answe a. b.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe er the following Assess If this course is mand not applicable. n/a If this course is requi 1. Provide the j 2. Provide tool learning in th	e: Maj Du must comp or/minor, how special resource ecial classroor ment question dated by an a ired for the m program leve or measure of his outcome b	jor blete the Reque v frequently wi rces such as un tc.? no m (computer la ons: accrediting or c hajor or minor, <u>l learning outc</u> directly linked to be measured?)	F Mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th ome(s) it ado to each progra	inor am Change offered? enance cos ssroom, or ncy, include e following dresses. ram learnin	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a og outcome. (How will s	tate
f selec F Elec If maj progra f cour Will th oftwa Will th Answe a. b.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe r the following Assess If this course is mand not applicable. n/a If this course is requi 1. Provide the j 2. Provide tool learning in th What is the rationale	e: Maj	jor blete the Reque v frequently wi rces such as un tc.? no m (computer la bns: accrediting or c najor or minor, <u>l learning outc</u> directly linked to be measured?) his course? Wh	F Mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th ome(s) it ado to each progra	inor am Change offered? enance cost ssroom, or ncy, include e following dresses. ram learnin demonstra	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a ng outcome. (How will s tes this need? We enco	tate
f seler ✓ Eler If maj progra f cour Will th oftwa Will th Answe a. b. c.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe rs the following Assess lf this course is mand not applicable. n/a lf this course is requi 1. Provide the p 2. Provide tool learning in th What is the rationale students to complete	e: Majou must comport ou must comport or/minor, how special resource ecial classroor ment question dated by an a ired for the m program leve or measure of his outcome be e for adding the e internships	jor plete the Reque v frequently wi rces such as un tc.? no m (computer la ons: accrediting or c hajor or minor, <u>l learning outc</u> directly linked to be measured?) his course? Wh because they l	I Mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th ome(s) it ado to each progra tat evidence have many bo	inor am Change offered? enance cost ssroom, or ncy, include e following dresses. ram learnin demonstra enefits, suc	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a ng outcome. (How will s ites this need? We enco	ecia tate
f seler ✓ Eler If maj progra f cour Will the Answe a. b. c.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe the following Assess If this course is mand not applicable. n/a If this course is requi 1. Provide the p 2. Provide tool learning in the What is the rationale students to complete what they are learning	e: Maj bu must comp br/minor, how special resource ecial classroor ment question dated by an a ired for the m program leve or measure of his outcome be e for adding the e internships ng in the class	jor blete the Reque v frequently wi rces such as un tc.? no m (computer la ons: accrediting or c hajor or minor, <u>l learning outc</u> directly linked to be measured?) his course? Wh because they h sroom to real-v	I mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th ome(s) it ado to each progra at evidence have many be vorld applica	inor am Change offered? enance cos ssroom, or ncy, include e following <u>dresses</u> . ram learnin demonstra enefits, suc	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a og outcome. (How will s ites this need? We enco thas helping students li at knowledge and getti	tate tate
f selec F Elec If maj progra f cour Will th oftwa Nill th a. b. c.	cted other list fee type ctive jor or minor course, yo am.) rse is required by majo nis course require any s are, distance learning e nis course require a spe rs the following Assess If this course is mand not applicable. n/a If this course is requi 1. Provide the j 2. Provide tool learning in th What is the rationale students to complete what they are learnin their "foot in the door	e: Maj bu must comp or/minor, how special resource equipment, efficiency ecial classroor ment question dated by an a ired for the m program leve or measure of his outcome be e for adding the e internships ng in the class or" which can	jor blete the Reque v frequently wi rces such as un tc.? no m (computer la ons: accrediting or c hajor or minor, <u>l learning outc</u> directly linked to be measured?) his course? Wh because they l sroom to real-v a lead to perma	I Mi est for Progra Il course be o usual mainte ab, smart clas ertifying age complete th ome(s) it ado to each progra at evidence have many be vorld applica nent employ	inor am Change offered? enance cost ssroom, or ncy, include e following dresses. ram learnin demonstra enefits, suc ations of the ment. This	form to add course to ts, library resources, sp laboratory)? no e the directive. If not, s g. n/a ng outcome. (How will s tes this need? We enco th as helping students li at knowledge and getti way they can receive	ecia tate tude oura ink ng

For the proposed course, attach a syllabus in Word format that includes: (Items a. through d. should be entered as they should appear in the catalog)

- a. Course subject
- b. Course number
- c. Catalog course title
- d. Catalog description
 - 1. Arkansas Course Transfer System (ACTS) course number, if applicable
 - 2. Cross-listing
 - 3. Offered (e.g., Fall only, Spring only. Do not enter if offer course fall and spring)
 - 4. Prerequisites
 - 5. Co-requisites
 - 6. Description
 - 7. Notes (e.g., information not in description such as course may be repeated for credit)
 - 8. Contact Hours if different than lecture (e.g., Lecture three hours, laboratory three hours)
 - 9. Fees (e.g., \$36 art fee)
- e. Section for Name of instructor, office hours, contact information (telephone, email)
- f. Text required for course
- g. Bibliography (supplemental reading list)
- h. Justification/rationale for the course
- i. Course objectives
- j. Description of how course meets general education objectives (courses included in the general education component should show how the course meets one or more of the objectives contained in General Education Objectives listed in undergraduate catalog)
- k. Assessment methods (include grading policy with specific equivalents for A, B, C)
- I. Policy on absences, cheating, plagiarism, etc.
- m. Course content (outline of material to be covered in course).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

n/a





Department of Engineering and Computing Sciences Fall 2023

INSTRUCTOR CONTACT INFORMATION

Instructor: Mrs. Rebecca (Becky) Cunningham Webex meeting room: <u>https://atu.webex.com/meet/rcunningham</u> Email: <u>rcunningham@atu.edu</u> Office location: Corley 248 Office phone: 479.880.4610 Expect an email response or returned phone call within 24 hours (except on weekends).

Office Hours

9-10 MWF	In person	Available in my office COR 248, in the Webex meeting
11-12 MWF	or virtual	room, by email, or by phone
and the second second		

Other times by appointment; please allow 24-hour notice when requesting appointment

COURSE DESCRIPTION

Prerequisite: Junior standing in the cybersecurity program

A supervised, practical experience providing cybersecurity majors with hands-on professional experience in a position relating to an area of career interests. The student should secure an approved internship prior to course enrollment. During the internship, the student will submit regular reports regarding their internship experience.

COURSE OBJECTIVES

- Assist the student's development of employer-valued skills such as teamwork, communications and attention to detail.
- Expose the student to the environment and expectations of performance on the part of an information technology professional in a professional setting.
- Enhance and/or expand the student's knowledge of a particular area(s) of computing.
- Meet professional role models and potential mentors who can provide guidance, feedback, and support.
- Expand network of professional relationships and contacts.
- Develop a solid work ethic and professional demeanor, as well as a commitment to ethical conduct and social responsibility.

none

COURSE OUTLINE

Internship Proposal: During the first week of the semester, the student will submit a proposal through Blackboard providing details of their internship goals and how you plan to meet them.

Progress Reports: At the end of each week, the student will submit a weekly progress report through Blackboard. The report will provide any pertinent information regarding the internship progress.

Final Report: During final exam week, but before the final exam day/time, the student will submit a final report providing details of their internship.

ASSESSMENT METHODS

Grades will be calculated on a total point basis. At any point during the course, simply divide your earned points by the points possible to calculate your current grade. (NOTE: Blackboard should do this for you.)

The traditional grading scale will be used to determine final grades:

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

Any questions concerning your grade need to be voiced as soon as possible.

POLICIES

Course policies align with the most recent version of the Student Handbook, which can be found at: https://www.atu.edu/studenthandbook/StudentHandbook-2020-ada.pdf

1. ATTENDANCE

During the first week of class, you must complete the Federal Initial Attendance and Participation Module to be considered as "actively participating" in the course. You may retake the assignment as often as you need to make 100%. Failure to make a 100% may result in being marked as "non-attended."

Since this class is online, there is no in-person attendance requirement.

2. COURSE ACTIVITIES / DUE DATES

Assignments should be completed on time or may receive a late penalty.

3. STUDENT ACCOMMODATIONS

NOTE: Submitted assignments/exams in this course may be used to assess aspects of the course and/or the department and may be viewed by other faculty and/or members of an accreditation team. All such use will preserve the student's anonymity. A student must be registered with Disability Services in order to qualify for special accommodations. (Registration must occur each semester; it doesn't carry over.) In addition, you should make contact with the instructor to determine which specific accommodations would be appropriate for this particular course.

Related University Policy: http://www.atu.edu/disabilities/index.php

4. FAIRNESS

Every effort will be made to ensure that all students are treated equally and fairly. That being said, special treatment may be awarded for extenuating circumstances if sought in advance and some students may qualify for special services. If you ever feel that you are being treated unequally, please discuss with your instructor.

Related University Policy: http://www.atu.edu/titleix/index.php

5. ACADEMIC INTEGRITY

You are expected to do your own work. (That means you actually sit in front of the computer and do the typing/clicking.) Any sharing of computer files is considered cheating, and all parties involved will be dealt with harshly. You may find that one cheating instance may haunt you for the rest of your college career, and in some cases, even beyond that. Don't risk it!

Students who violate the Code of Academic Integrity (cheating, plagiarism, etc.) face penalties ranging from being required to redo the assignment (i.e., properly cite sources in cases of plagiarism) to failure of the assignment and/or class. The sanction is dependent on the severity of the violation as well as the number of times a student has violated the policy in the class. Egregious or multiple violations may result in additional university level sanctions.



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/22

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Jury & Cyric	12/1/2022
Assessment	Chulmt	12/5/22
Registrar	Stemmy lucaller	113123
Graduate Dean (Graduate Proposals Only)	()	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: Bachelor of Science in Computer Science

Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

- Remove 13 hours:
 - ELEG 2134/2130 Digital Logic and Lab
 - o CSEC 2213 Network Forensics and Incident Response
 - o COMS 4063 IT Project Administration
 - o Elective 3 hrs
 - Add 13 hours:
 - o CSEC 1003 Introduction to Cybersecurity
 - COMS 2163 Scripting Languages
 - o COMS 2323 Programming in Python
 - o COMS 4923 Capstone II
 - 3-4xxx elective 1 hr

What impact will the change have on staffing, on other programs and space allocation?

- Multiple sections of CSEC 1003 will be needed, as it is being added to all computing degrees. We currently only have 2 Cybersecurity faculty on staff but have needed 3 for quite some time. The addition of this course (which was recommended by the state and will be good for recruiting) will further the need for an additional Cybersecurity faculty member.
- The Scripting Languages and Programming in Python courses are being added to multiple programs, but current faculty and/or adjuncts should be able to handle the load for these courses.
- Our current computer labs/classrooms can accommodate the new courses.

Answer the following Assessment questions:

- a. How does the program change align with the university mission?
 - In keeping with ATU's mission of student success, removal of the Digital Logic course will strengthen our students' success in our CS program. Computer Science students struggle in this course, as they don't have the background that the engineering majors have. This course is being replaced with a Programming in Python course (and a 1 hr U/D elective) that will provide CS students with additional skills that will prove beneficial to them in other coursework and in their career. The Network Forensics course is being removed in favor of more generic Intro to Cybersecurity course which will be part of the ACTS and will be beneficial with recruitment. The IT Project Admin course is being removed so that we can add an official capstone sequence (I and II) to give our students a full year of designing and developing a system. These proposed changes received support from our Advisory Board.
- b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable. **n/a**
- c. What is the rationale for this program change?
 - 1. How will the program change impact learning for students enrolled in this program? As stated above, students will be more successful in the CS program and their future career.
 - Provide an example or examples of student learning assessment evidence which supports the changes in the program. DFWI rates are high in ELEG 2134; many of our students have communicated that they did not feel prepared for the course and struggled all the way through the course. CS instructors felt the addition of a Python course would strengthen their students' skills.

- d. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions. In looking at similar programs at other institutions, many no longer require a course in digital logic for their CS programs. In addition, our accrediting body (ABET) no longer lists skills from this course as required for accreditation. The other additions are common in other CS programs. As mentioned above, there is a move across the state to include an introductory cybersecurity course in all computing curriculums. Many universities provide a year-long capstone experience.
- e. Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.) Assessment plan for BSIT does not have any major changes; current plan on file with Assessment Office. The only affected courses will be: COMS 4063 Project Management will be replaced with COMS 4913 Capstone I COMS 4913 Capstone I will be replaced with Capstone II

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

Since the restructuring, COMS and ELEG courses are now both under the same department. It has been internally communicated that there will be less demand for ELEG 2134/2130 since CS students will no longer be taking the course.

Curriculum Matrix for Catalog			
Curriculum in BS in	n Computer Science		
Freshman Fall Semester	Freshman Spring Semester		
The state of			
Add/Change:	Add/Change:		
CSEC 1003 Introduction to Cybersecurity	MATH 2924 Calculus II		
	COMS 1113 Introduction to Networking		
Delete:	Delete: CSCC		
COMS 1113 Introduction to Networking	Social Science		
CAEC	Elective – 3 hrs		
	COMS 2703 Computer Hardware and Architecture		
Total Hours: 14	Total Hours: 14		
Sophomore Fall Semester	Sophomore Spring Semester		
sophomore run semester	sopholinore spring seriescer		
Add/Change:	Add/Change:		
Social Science	COMS 2163 Scripting Languages		
COMM 2173 Business and Professional Sneaking	Delete:		
COMS 2703 Computer Hardware and Architecture	COMM 2173 Business and Professional Speaking		
Delete:			
FLEG 2134 Digital Logic and FLEG 2130 DL Lab			
MATH 2924 Calculus II			
CSEC 2213 Network Forensics and Incident Response			
CSEC 2215 Network Forensies and incluent Response			
Total Hours: 15	Total Hours: 16		
Total Hours: 15 Junior Fall Semester	Total Hours: 16 Junior Spring Semester		
Total Hours: 15 Junior Fall Semester	Total Hours: 16 Junior Spring Semester		
Total Hours: 15 Junior Fall Semester Add/Change:	Total Hours: 16 Junior Spring Semester Add/Change:		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete:	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete:		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester Add/Change:	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester Add/Change:		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester Add/Change: STAT 3153 Applied Statistics	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester Add/Change: MATH 4003 Linear Algebra I		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester Add/Change: STAT 3153 Applied Statistics COMS 4913 Capstone I	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester Add/Change: MATH 4003 Linear Algebra I COMS 4923 Capstone II		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester Add/Change: STAT 3153 Applied Statistics COMS 4913 Capstone I Delete:	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester Add/Change: MATH 4003 Linear Algebra I COMS 4923 Capstone II Delete:		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester Add/Change: STAT 3153 Applied Statistics COMS 4913 Capstone I Delete: MATH 4003 Linear Algebra I	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester Add/Change: MATH 4003 Linear Algebra I COMS 4923 Capstone II Delete: COMS 4913 Capstone I		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester Add/Change: STAT 3153 Applied Statistics COMS 4913 Capstone I Delete: MATH 4003 Linear Algebra I COMS 4063 IT Project Administration	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester Add/Change: MATH 4003 Linear Algebra I COMS 4923 Capstone II Delete: COMS 4913 Capstone I		
Total Hours: 15 Junior Fall Semester Add/Change: Fine Arts and Humanities COMS 2323 Programming in Python Delete: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Total Hours: 15 Senior Fall Semester Add/Change: STAT 3153 Applied Statistics COMS 4913 Capstone I Delete: MATH 4003 Linear Algebra I COMS 4063 IT Project Administration	Total Hours: 16 Junior Spring Semester Add/Change: COMS 3053 Ethical Issues in Technology COMS 3233 Database Design and Implementation Change "Approved 3000-4000 level Elective" from 2 hrs to 3 hrs Delete: Fine Arts and Humanities STAT 3153 Applied Statistics Total Hours: 16 Senior Spring Semester Add/Change: MATH 4003 Linear Algebra I COMS 4923 Capstone II Delete: COMS 4913 Capstone I		

In the attached matrix, include requested changes in the matrix and include course number and title.

DOWNLOAD PDF 📓

General Information

Navigate this section:

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF 📓

Bachelor of Science in Computer Science

DEPARTMENT HOMEPAGE The program in computer science prepares students for careers as systems programmers in a scientific and/or engineering environment and for graduate work in computer science. Mathematics and engineering courses supplement a strong core of computer science courses, enabling students to design and implement software that requires complicated computations, data structures and interfaces.

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Freshman

Sophomore

Fall

Fall	Credits
ENGL 1013	3
Composition I ¹	
CSEC-INS CSECIOC	3 -
Introduction to	3
Networking	0
COMS 1333 Web and	3
Mobile Technologies	
TECH 1001	1
Orientation to the	
University ²	
MATH 2914 Calculus I	4
Total Hours	14

Spring	Credits
ENGL 1023	3
Composition II ¹ CONCECTINS SS1XXX Social	3
Science Courses ¹	
COMS 1011	4
Programming I Lab	
and COMS 1013	
Programming I	
COMS 2703 Computer	-3-
Hardware and	
Architecture	
Elective- MATH2924 Total Hours	-3-4 -16. 14
	~
Spring	Credits
ENGL 2053 Technical	3

V

Credits

Writing

Bachelor of Science in Computer Science

Fall	Credits
ELEG 2130 Digital	4
Logic Design Lab and	
ELEG 2134 Digital	
Logic Design	
MATH 2924 Calculus	4
II	
COMS 2203	3
Programming II	
MATH 2703 Discrete	3
<u>Mathematics</u>	
CSEC 2213 Network	-3-
Forensics and	
Incident Response	
Total Hours	17
social Sciences	3
COMM 2173	3
com5 2703	3
nior	15

Spring	Credits
SCIL 1XXX Science with Laboratory ¹	4
<u>COMS 2213 Data</u> <u>Structures</u>	3
COMS 2223 Computer Organization and Programming	3
COMM 2173 Business and Professional	-3-
Speaking S COM5 2163 Total Hours	3 16

		200	2	1.00	100	
3	u	n	1	o	r	
-	~		٠	~		

Fall	Credits	Sp
COMS 3703 Advanced	3	FA
Operating Systems		an
Fine Arts / Hum COMS 3053 Ethical	3	Ce
Issues in Technology		SC
COMS 3213 Algorithm	3	<u>wi</u>
Design and Analysis		S
COMS 2323	3	Ste
COMS 3233 Database	-3-	
Design and		C
Implementation		En
Approved 3000-4000	3	Ap
level Elective ⁴		lev
Total Hours	15	То

Spring	Credits	
FAH 1XXX Fine Arts	3	
and Humanities Courses 1 60 M 5	3053	3
SCIL 1XXX Science	4	
with Laboratory ¹ Com 5 STAT 3153 Applied Statistics	733	3
COMS 3313 Software Engineering	3	
Approved 3000-4000 level Elective ⁴	-2-3	
Total Hours	_15_	6

v

Senior

Fall	Credits	Spring	Credits
USHG 1XXX U. S.	3	SS 1XXX Social	3
History and		Science Courses	
<u>GovernmentU. S.</u>			
History and			
Government ¹			

Fall	Credits	Spring	Credits
FAH 1XXX Fine Arts and Humanities Courses ¹	3	COMS 4413 Parallel and Distributed Computing	3
STAT 3153 MATH 4003 Linear	<u> </u>	GOMS 4913 Capstone	-3
COMS 4063 IT Project	<u> </u>	Approved 3000-4000 level Elective ⁴	3
Administration		Total Hours	12
COMS 4103 Organization of Programming	3	MATH 4003 Com 5 4923	33
Languages Total Hours	15		15

¹See appropriate alternatives or substitutions in "General Education Requirements".

^a <u>TECH 1013</u> Introduction to the University is a substitution for <u>TECH 1001</u> Orientation to the University. Electives would reduce from 3 hours to 1 hour

³ COMM 2003 Public Speaking for COMM 2173 Business and Professional Speaking.

⁴ If a math elective is taken, math elective must be beyond pre-calculus.

DEGREE AUDIT CHECK LIST (BS-COMS) Computer Science

Date			Student's Name			
Grade Point	Graduation Date		T#			
General	Education Requirements	Hrs		Major Requirements	Hrs	
ENGL #	1013/1043 & 1023/1053	6	COMS	1011 1013 1333 2203 2213 2223		
MATH #		0		2703 3053 3213 3233 3313 3703	- 2	
SCIENCE	*	4		4063 4103 4413 4913 2163 2323 49	23 46-	5.
SCIENCE		4	CSEC	1113 2213 1003	6	
US HIST/GOVT	3	3				
SOC SCI	a a a a a a a a a a a a a a a a a a a	3	СОММ	2003 or 2173**	3	
SOC SCI		3	ELEG	2130 2134	_4-	
FINE ART/HUM	1	3	ENGL	2053	3	
FINE ART/HUM		3	матн	2703 2914#** 2924 4003	14	
СОММ		0				
TECH 1001 ♦	or TECH 1013	1	STAT	3153	3	
				Approved UD Electives	9.8-	
TOTAL GEN H	ED HOURS	30				
Electives						
12 455				C or better in a MATH for Gen Ed		
				TOTAL MAJOR HOURS	87	.9
TOTAL ELEC	TIVE HOURS	-3		TOTAL HOURS		

Final	Check:
	~ *** * * ***

Min. hours required 120 44 hours upper level thru # of "D" hours _____ thru Max activity hours 4



** Satisfying Gen Ed • Satisfying Institutional Requirement

C or better must be earned for Gen Ed



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/22

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cyric	12/1/2022
Assessment	Mr Ande	12/5/22
Registrar	Jammyluauu	1/3/23
Graduate Dean (Graduate Proposals Only)	U	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: Bachelor of Science in Cybersecurity

Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

- Remove 11 hours:
 - ELEG 2134/2130 Digital Logic and Lab
 - CSEC 2113 Introduction to Information Systems
 - o Elective (3000-4000 Level) 4 hrs
 - Add 11 hours:
 - o CSEC 1003 Introduction to Cybersecurity
 - o COMS 2323 Programming in Python
 - o COMS 3233 Database Design and Implementation
 - Elective 2 hrs

What impact will the change have on staffing, on other programs and space allocation?

- Multiple sections of CSEC 1003 will be needed, as it is being added to all computing degrees. We currently only have 2 Cybersecurity faculty on staff but have needed 3 for quite some time. The addition of this course (which was recommended by the state and will be good for recruiting) will further the need for an additional Cybersecurity faculty member.
- The Programming in Python course is also being added to all of the programs, but current faculty and/or adjuncts should be able to handle the load for that.
- Only one additional section of COMS 3233 will be needed; current staff will be sufficient.
- Our current computer labs/classrooms can accommodate the new courses.

Answer the following Assessment questions:

- a. How does the program change align with the university mission? In keeping with ATU's mission of student success, removal of ELEG 2134/2130 will strengthen our students' success in our CSEC program. Cybersecurity students struggle in this course, as they don't have the background that the engineering majors have. Adding a course in databases and Python will provide CSEC students with additional skills that will prove beneficial to them in other coursework and in their career.
- b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable.
 n/a
- c. What is the rationale for this program change?
 - 1. How will the program change impact learning for students enrolled in this program? As stated above, students will be more successful in the CSEC program.
 - 2. Provide an example or examples of student learning assessment evidence which supports the changes in the program. DFWI rates are high in ELEG 2134/2130; many of our students have communicated that they did not feel prepared for the course and struggled all the way through the course. CSEC instructors felt the addition of a database course and a Python course would strengthen their students' skills.
- d. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions. In looking at similar programs at other institutions, many do not require a course in digital logic for their Cybersecurity programs. In addition, our accrediting body (ABET) does not list skills

from this course as required for accreditation. Many institutions require students to learn multiple programming languages.

e. Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.) Assessment plan for BSCSEC has not changed; current plan on file with Assessment Office.

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

Since the restructuring, COMS and ELEG courses are now both under the same department. It has been internally communicated that there will be less demand for ELEG 2134/2130 since Cybersecurity students will no longer be taking the course.

Curriculum Matrix for Catalog		
Curriculum in BS	S in Cybersecurity	
Freshman Fall Semester	Freshman Spring Semester	
Add/Change:	Add/Change:	
CSEC 1003 Introduction to Cybersecurity	Science with lab	
	Delete:	
Delete:	U.S. History/Government	
	CSEC 2113 Introduction to Information Systems	
Total Hours: 16	Total Hours: 14	
Sophomore Fall Semester	Sophomore Spring Semester	
Add/Change:	Add Elective 2 bro	
CSEC 2223 Virtualization	Add COMS 2222 Programming in Buthon	
ELEC 2124 Digital Logic and ELEC 2120 DL Lab	Change – catalog currently shows COMM 2003 or	
ELEG 2154 Digital Logic and ELEG 2150 DE Lab	COMM 2173 Can you remove the COMM 2003 in the	
	grid and just have it show COMM 2173 there (and	
	leave the footnote)?	
	Delete:	
	Science with lab	
	CSEC 2223 Virtualization	
Total Hours: 15	Total Hours: 15	
Junior Fall Semester	Junior Spring Semester	
Add/Change:	Add/Change:	
CSEC 3243 Computer Architecture	COMS 3233 Database Design and Implementation	
Delete:	COMS 3703 Advanced Operating Systems	
COWS 3703 Advanced Operating Systems	CSEC 22/13 Computer Architecture	
	Flective – 3 hrs	
Total Hours: 16	Total Hours: 15	
Senior Fall Semester – no changes	Senior Spring Semester	
	Addition Flood inet 2100	
Add/Change:	Add/Change: CICCTIVES 2 MrS	
Delete:	Delete:	
	Elective (3000-4000 Level) – 4 hrs	
	GK	
Total Hours: 15		
	Total Hours: 14	

In the attached matrix, include requested changes in the matrix and include course number and title.

DEGREE AUDIT CHECK LIST (BS-CSEC) Cybersecurity 2022-23 2023-24

Date		Student's Name		
Grade Point	Graduation Date		T #	
General	Education Requirements	Hrs		Major Require
ENGL #	1013/1043 & 1023/1053	6	CSEC	1113 1213 2113 221
MATH #		0		3123 3223 3233 324
SCIENCE		4		4143 4153 4213 423
SCIENCE		4		
US HIST/GOVT		3	COMS	1011 1013 2203 221
SOC SCI		3		2323
SOC SCI		3		
FINE ART/HUM	I	3		
FINE ART/HUM	I	3	СОММ	2173** or 2003
СОММ		0	ELEG	2130 2134
TECH 1001 ♦	or TECH 1013	1	МАТН	2703 (2243 or 2914*
			STAT	2163
TOTAL GEN H	ED HOURS	30		
Electives				
-				
		5		TOTAL MAJOR HOU
TOTAL ELEC	FIVE HOURS (4 UD)	-7-		TOTAL HOURS

Final Check:

Min. hours required 120 40 hours upper level _____ thru _____ # of "D" hours thru Max activity hours 4



** Satisfying Gen Ed Satisfying Institutional Requirement # C or better must be earned for Gen Ed DOWNLOAD PDF 📓

General Information

Navigate this section:

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF 📓

Bachelor of Science in Cybersecurity

DEPARTMENT HOMEPAGE The rise in cyber threats has created an unprecedented demand for cybersecurity specialists. Data breaches, malware infections, and software vulnerabilities are common in today's technology and it is critical to fully understand how these attacks occur, how to prevent them, and how to recover. A cybersecurity major will understand techniques used as well as the best methods to protect data. The cybersecurity degree includes courses in programming, wireless technologies, mathematics, and networking concentrating on theory and hands-on experience.

v

14

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Freshman

Fall	Credits	Spring	Credits
ENGL 1013	3	ENGL 1023	3
Composition I ¹		Composition II ¹	
FAH 1XXX Fine Arts	3	USHG 1XXX U.S.	3
<u>and Humanities</u>		History and	
Courses ¹		GovernmentU.S.	
		History and	
<u>MATH 2243 Calculus</u> for Business and	3	Government ¹	
Economics ³		COMS 1011	4
		Programming I Lab	
<u>TECH 1001</u>	1	and <u>COMS 1013</u>	
<u>Orientation to the</u> <u>University</u> ²		Programming I	
0050		CSEC 1213 Wireless	3
Introduction to	3	and Cellular Security	
<u>Networking</u>		- CSEC 2113	-3-
Tatal ITana	10	Introduction to	
CSEC 1003	3	Information Systems	
	-	Total Hours	-16-
	1/2	Science will 1	1 1

Sophomore

Fall	Credits
ELEG 2130 Digital Logic Design Lab and	4
ELEG 2134 Digital	
Logic Design	
COMS 2203	3
Programming II	
MATH 2703 Discrete	3
Mathematics	
CSEC 2213 Network	3
Forensics and	
Incident Response	
SS 1XXX Social	3
Science Courses 1	
Total Hours	-16
CSEC 2223	B

SCIL 1XXX Science with Laboratory ¹ COMM 2003 Public Speaking or COMM 2173 Business and	3
with Laboratory ¹ COMM 2003 Public Speaking or COMM 2173 Business and	3
COMM 2003 Public Speaking or COMM 2173 Business and	3
Speaking or COMM 2173 Business and	
2173 Business and	
D C 1 10 11	
4	
COMS 2213 Data	3
Structures	
COMS 2223 Computer	3
Organization and	
Programming	
CSEC 2223	3_
Virtualization	
Total Hours	16
Electives	3
coms 2323	3
	IE

Junior

Fall	Credits
SCIL 1XXX Science	4
with Laboratory ¹ CSEC 3243	3
COMS 3703 Advanced Operating Systems	3
STAT 2163	3
Introduction to	5
Statistical Methods	
CSEC 4133 Large Scale	3
Distributed Systems	
CSEC 3123 Cyber	3
<u>Defense I</u>	
Total Hours	16

15

Spring	Credits
FAH 1XXX Fine Arts	3
and Humanities	
Courses 1 Coms \$233	3
Elective	-3
CSEC 3223	3
Programming	
Embedded Systems	
CSEC 3233 Cyber	3
Defense II COMS 3703	3
CSEC 3243 Computer	- 3-
Architecture	
Total Hours	15

enior			~
Fall	Credits	Spring	Credits
SS 1XXX Social	3		
Science Courses 1			

V

Bachelor of Science in Cybersecurity

Fall	Credits	Spring	Credits
<u>CSEC 4123 Applied</u> <u>Cryptography</u>	3	CSEC 4213 Information Systems	3
<u>CSEC 4143 Building</u> Secure Software	3	CSEC 4243 Software	3
<u>CSEC 4153 Human</u> Factors in	3	<u>Security Analysis and</u> <u>Reverse Engineering</u>	
<u>Cybersecurity</u>		CSEC 4293	3
<u>CSEC 4233 Legal Issues in Cybersecurity</u>	3	Capstone Project USHIST/Gov+ Elective (3000-4000	3
Total Hours	15	Elective Compared to the second secon	13

¹ See appropriate alternatives or substitutions in "General Education Requirements".

² <u>TECH 1013</u> Introduction to the University is a substitution for <u>TECH 1001</u> Orientation to the University. Electives would reduce from 3 hours to 1 hour.

³ <u>MATH 2914 Calculus I</u> is a substitution for <u>MATH 2243 Calculus for Business and Economics</u>.

⁴ COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/22

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Jury & Cynx	12/1/2022
Assessment	Marchit	12/5/22
Registrar	Jammylucauce	1/3/23
Graduate Dean (Graduate Proposals Only)	0	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: Bachelor of Science in Information Technology

Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

Track 1 (Programming, Database, and Web) changes:

- Remove 9 hours:
 - o CSEC 2213 Network Forensics and Incident Response
 - o COMS 4063 IT Project Administration
 - o Elective 3 hrs
- Add 9 hours:
 - CSEC 1003 Introduction to Cybersecurity
 - o COMS 2323 Programming in Python
 - o COMS 4923 Capstone II

Track 2 (Network and Security) changes:

- Remove 6 hours:
 - COMS 4063 IT Project Administration
 - Elective 3 hrs
- Add 6 hours:
 - o CSEC 1003 Introduction to Cybersecurity
 - COMS 4923 Capstone II
- Change "COMS 2163 Scripting Languages" to "COMS 2163 Scripting Languages or COMS 2323 Programming in Python" (to allow students a choice between the two courses)

What impact will the change have on staffing, on other programs and space allocation?

- Multiple sections of CSEC 1003 will be needed, as it is being added to all computing degrees. We currently only have 2 Cybersecurity faculty on staff but have needed 3 for quite some time. The addition of this course (which was recommended by the state and will be good for recruiting) will further the need for an additional Cybersecurity faculty member.
- The Programming in Python course is being added to multiple programs, but current faculty and/or adjuncts should be able to handle the load for it.
- Our current computer labs/classrooms can accommodate the new courses.

Answer the following Assessment questions:

- a. How does the program change align with the university mission? In keeping with ATU's mission of student success, the proposed changes will increase our students' success in the program, as well as in their future career by providing them additional skills and experiences. The Network Forensics course is being removed from Track 1 in favor of more generic Intro to Cybersecurity course – which will be part of the ACTS and will be beneficial with recruitment. The IT Project Admin course is being removed so that we can add an official capstone sequence (I and II) to give our students a full year of designing and developing a system. These proposed changes received support from our Advisory Board.
- b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable. **n/a**
- c. What is the rationale for this program change?
 - How will the program change impact learning for students enrolled in this program? As stated above, students will be more successful in the IT program and their future career.
 - Provide an example or examples of student learning assessment evidence which supports the changes in the program. Feedback from both students and faculty, as well as a move across the state to include an introductory course in cybersecurity in all computing curriculums, led to this change.

- d. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions. As mentioned above, there is a move across the state to include an introductory cybersecurity course in all computing curriculums. Many universities provide a year-long capstone experience.
- Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.) Assessment plan for BSIT does not have any major changes; current plan on file with Assessment Office. The only affected courses will be: COMS 4063 Project Management will be replaced with COMS 4913 Capstone I COMS 4913 Capstone I will be replaced with Capstone II

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

n/a

Curriculum N	latrix for Catalog			
Curriculum in BS in Information Technology Track 1 (Programming Mich, Database)				
	gy – Track I (Programming, Web, Database)			
Freshman Fall Semester	Freshman Spring Semester			
Add/Change:	Add/Change:			
CSEC 1003 Introduction to Cybersecurity	Social Science			
Delete:	Delete:			
Social Science	COMS 2713 Survey of Operating Systems (*5)			
Total Hours: 16	Total Hours: 16			
Sophomore Fall Semester	Sophomore Spring Semester			
Add/Change:	Add/Change:			
ENGL 2053 Technical Writing	COMM 2173 Business and Professional Speaking (*6)			
COMS 2163 Scripting Languages	COMS 2323 Programming in Python			
Delete:	COMS 2713 Survey of Operating Systems (*5)			
COMM 2173 Business and Professional Speaking (*6)	Delete:			
CSEC 2213 Network Forensics and Incident Response	ENGL 2052 Technical Writing			
end and the sponse	COMS 2162 Societing Languages			
	Elective 2 hrs			
Total Hours: 16	Elective – 3 hrs			
	Table and the			
Junior Fall Consister	Total Hours: 15			
Junior Fail Semester	Junior Spring Semester			
	un di zerenden			
Add/Change:	Add/Change:			
COMS 3523 Human Factors in Information	COMS 3053 Ethical Issues in Technology			
Technology	Delete:			
Delete:	COMS 3523 Human Factors in Information			
COMS 3053 Ethical Issues in Technology	Technology			
Total Hours: 15	Total Hours: 15			
Senior Fall Semester	Senior Spring Semester			
Add/Change:	Add/Change:			
COMS 4913 Capstone I	COMS 4923 Capstone II			
Delete:	Delete:			
COMS 4063 IT Project Administration	COMS 4913 Canstone L			
Total Hours: 15	Total Hours: 12			
	Total Houls, 12			

In the attached matrix, include requested changes in the matrix and include course number and title.

5 I 5 I 6 I	
Freshman Fall Semester	Freshman Spring Semester
Add/Change:	Add/Change:
CSEC 1003 Introduction to Cybersecurity	Social Science
Delete:	Delete:
Social Science	COMS 2713 Survey of Operating Systems (*5)
Total Hours: 16	Total Hours: 16
Sophomore Fall Semester	Sophomore Spring Semester
Add/Change:	Add/Change:
CSEC 2223 Virtualization	COMM 2173 Business and Professional Speaking (*6)
Delete:	COMS 2713 Survey of Operating Systems (*5)
COMM 2173 Business and Professional Speaking (*6)	Change "COMS 2163 Scripting Languages" to "COMS
	2163 Scripting Languages or COMS 2323
	Programming in Python"
	Delete:
	CSEC 2223 Virtualization
	Elective – 3 hrs
Total Hours: 16	Total Hours: 15
Junior Fall Semester	Junior Spring Semester
Add/Change:	Add/Change:
Fine Arts and Humanities	COMS 3053 Ethical Issues in Technology
Delete:	Delete:
COMS 3053 Ethical Issues in Technology	COMS 3523 Human Factors in Information
	Technology
Total Hours: 15	Total Hours: 15
Senior Fall Semester	Senior Spring Semester
Add/Change:	Add/Change:
COMS 3523 Human Factors in Information	COMS 4923 Capstone II
Technology	Delete:
COMS 4913 Capstone I	COMS 4913 Capstone I
Delete:	
Fine Arts and Humanities	
COMS 4063 IT Project Administration	

DEGREE AUDIT CHECK LIST (BS-ITP) Information Technology Programming, Database, & Web

Date			Student	t's Name	
Grade Point	Graduation Date		T#		
General	Education Requirements	Hrs		Major Requirements	Hrs
ENGL#	1013/1043 & 1023/1053	6	COMS	1011 1013 1333 2163 2203 2323 4	923
MATH #		0		2213 2703 (2713 or 3703) 3053 3163 32	33
SCIENCE		4		3243 3523 3413 4033 4063 4213 4913	-52-
SCIENCE		4	CSEC	1113 2213- 1003	6
US HIST/GOVT		3			
SOC SCI		3			
SOC SCI		3	сомм	2173** or 2003	3
FINE ART/HUN	4	3	ENGL	2053	3
FINE ART/HUN	4	3	MATH	1113#** (2243 or 2914) 2703	9
СОММ		0	STAT	2163	3
TECH 1001 •		1		Approved Electives 3XXX - 4XXX	11
TOTAL GEN I	ED HOURS	30			
Electives					
		0		TOTAL MAJOR HOURS	-87
TOTAL ELEC	TIVE HOURS	-3-		TOTAL HOURS	
Final Check:	Min. hours require	ed 120		Earned Hrs	
	40 hours upper lev	el thru		minus P/C HRS	
	# of "D" hou	rs thru		to be completed	
	Max activity hours	4		TOTAL	

TOTAL

** Satisfying Gen Ed Satisfying Institutional Requirement # C or better must be earned for Gen Ed DOWNLOAD PDF

General Information

Navigate this section:

V

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF 📓

Bachelor of Science in Information Technology

DEPARTMENT HOMEPAGE The program in information technology prepares students for careers in administering and supporting the computing infrastructures of an organization. The curriculum consists of an integrated set of courses in networking, web development and administration, database development and administration, systems administration, and computer forensics.

Curriculum Track 1:

Programming, Database, and Web

Both matrices below are sample plans for all coursework required for Track 1 and Track 2.

Freshman

Fall	Credits	Spring	Credits
ENGL 1013 Composition I ¹	3	ENGL 1023 Composition II ¹	3
MATH 1113 College Algebra ² CSEC 1003 SS 1XXX Social	3	MATH 2243 Calculus for Business and Economics ⁴	3
Science Courses ¹ TECH 1001 Orientation to the University ³	1	COMS 1011 Programming I Lab and COMS 1013 Programming I	4
CSEC 1113 Introduction to Networking	3	COMS 2703 Computer Hardware and Architecture	3 3
COMS 1333 Web and Mobile Technologies	3	COMS 2713 Survey of Operating Systems 5	3
Total Hours	15	Total Hours	16

Sophomore

Fall Credits

https://www.atu.edu/catalog/current/undergraduate/colleges/science_technology_engineering_mathematics/engineering_computing_science_dept/co... 1/5

Fall	Credits	Spring
SCIL 1XXX Science with Laboratory ¹	4	ENGL 2053 Technical
COMS 2203	3	COMS 2213 Data
ENGL 2C53 COMM 2173 Business	3	STAT 2163
Speaking 6		Statistical Methods COMS 2323
MATH 2703 Discrete	3	COMS 2163 Scripting
Mathematics Coms 2163 CSEC 2213 Network	3	Coms 21135
Forensics and		
Incident Response		Total Hours
Total Hours	16	

Junior

Fall	Credits	Sp
SCIL 1XXX Science	4	FA
with Laboratory 1	2	an
COMS 3523 COMS 3053 Ethical	5	<u>Co</u>
Issues in Technology		<u>C(</u>
COMS 3233 Database	3	Pre
Design and		G
Implementation		Fa
COMS 2412 Ann	2	Int
Development	3	Te
		<u>C(</u>
Approved 3000-4000	2	Mi
level Elective		
Total Hours	16	Ap
Iotal Hours	12	lev

Spring	Credits
FAH 1XXX Fine Arts	3
and Humanities	
Courses ¹	
COMS 3163 Web	3
Programming	
COMS 3523 Human	-3-
Eactors in Coms	3057
Information	1053
<u>Technology</u>	
COMS 3243 Data	3
Mining	
Approved 3000-4000	3
evel Elective	
Fotal Hours	15

Credits

-3-

3 3

3

3 3

-3-

15

×

3

Senior			*
Fall	Credits	Spring	Credits
SS 1XXX Social Science Courses 1	3	FAH 1XXX Fine Arts and Humanities	3
		Courses 1	

Fall	Credits	Spring	Credits
USHG 1XXX U.S.	3	COMS 4213 Database	3
History and		Administration	2
<u>GovernmentU. S.</u> <u>History and</u>		COMS 4913 Capstone	3
Government ¹		Approved 3000-4000	3
COMS 4033 Systems	3	level Elective	
Analysis and Design		Total Hours	12
COMS 4063 IT Project	-3		
Administration COM	5 4913	3	
Approved 3000-4000	3		
level Elective			
Total Hours	15		

Curriculum Track 2:

Network and Security

Freshman

Fall	Credits	Spring	Credits
ENGL 1013 Composition I ¹	3	ENGL 1023 Composition II ¹	3
MATH 1113 College Algebra ²	3	MATH 2243 Calculus for Business and	3
<u>SS 1XXX Social</u> Science Courses ¹	3	COMS 1011	4
<u>TECH 1001</u> <u>Orientation to the</u> <u>University</u> ³	1	Programming I Lab and <u>COMS 1013</u> Programming I	
CSEC 1113 Introduction to Networking	3	<u>COMS 2703 Computer</u> Hardware and <u>Architecture</u>	3
COMS 1333 Web and Mobile Technologies	3	COMS 2713 Survey of Operating Systems ⁵	3
Total Hours	15	Total Hours	16
phomore			
Fall	Credits		
SCIL 1XXX Science	4	Spring	Credits
with Laboratory		ENGL 2053 Technical Writing	3

1

Y

Fall	Credits	Spring	Credits
COMS 2203 Programming II	3	COMS 2163 Scripting Languages	3
COMM 2173 Business and Professional Speaking 6	3	<u>COMS 2213 Data</u> <u>Structures</u>	3
MATH 2703 Discrete	3	CSEC 2223 Virtualization	3
<u>Concernation</u>	/	Elective	3
CSEC 2213 Network Forensics and Incident Response	3	Total Hours	15
Total Hours	16		

Junior

Fall	Credits	Spring	Credits
COMS 2052 Ethical	2	SCIL 1VVV Science	
Issues in Technology	3	with Laboratory ¹	4
COMS 3233 Database	3	COMS 3373 Data	3
<u>Design and</u>		Center Operations	
Implementation	/	COMS 3523 Human	3
COMS 3363 Server	3	Factors in	
Administration		Information	
CSEC 3123 Cyber	3	<u>Technology</u>	
Defense I		CSEC 3233 Cyber	3
Approved 3000-4000	3	Defense II	
level Elective		Approved 3000-4000	2
Total Hours	15	level Elective	
		Total Hours	15

Senior

Fall	Credits	Spring	Credits	
FAH 1XXX Fine Arts and Humanities Courses ¹	3	FAH 1XXX Fine Arts and Humanities Courses ¹	3	
USHG 1XXX U. S. History and GovernmentU. S.	3	COMS 4713 Networking Practicum	3	
History and Government ¹		COMS 4913 Capstone	3	

https://www.atu.edu/catalog/current/undergraduate/colleges/science_technology_engineering_mathematics/engineering_computing_science_dept/co... 4/5

Y

Y

Fall	Credits	Spring	Credits
SS 1XXX Social Science Courses 1	3	Approved 3000-4000 level Elective	3
COMS 4063 IT Project Administration	3	Total Hours	12
Approved 3000-4000 level Elective	3		
Total Hours	15		

¹ See appropriate alternatives or substitutions in "<u>General Education Requirements</u>".

² Student may waive this course by taking <u>MATH 2243 Calculus for Business and Economics</u> or <u>MATH 2914 Calculus I</u> instead and take an elective in its place.

³ <u>TECH 1013</u> Introduction to the University is a substitution for <u>TECH 1001</u> Orientation to the University. Elective would reduce

from 3 hours to 1 hour.

⁴ MATH 2914 Calculus I is a substitution for MATH 2243 Calculus for Business and Economics.

⁵ COMS 3703 Advanced Operating Systems is a substitution for COMS 2713 Survey of Operating Systems.

⁶ COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.

DEGREE AUDIT CHECK LIST (BS-ITN) Information Technology Network & Security

Date		Student'	s Name		
Graduation Date		T#			
General E	ducation Requirements	Hrs	Major Requirements Hr		
ENGL#	1013/1043 & 1023/1053	6	COMS	1011 1013 1333 2163 2203	
MATH #		0		2213 2703 (2713 or 3703) 3053 3233	
SCIENCE		4		3363 3373 3523 4063 4713 4913 497	3
SCIENCE		4			46
US HIST/GOVT		3	COWIS	2163 or 2383	3
SOC SCI		3	CSEC	1113 2213 2223 3123 3233 1003	-15
SOC SCI		3			
FINE ART/HUM	1	3			
FINE ART/HUM	1	3	СОММ	2173** or 2003	3
сомм		0	ENGL	2053	3
TECH 1001 ♦		1	MATH	1113#** (2243 or 2914) 2703	9
				Approved Electives 3XXX - 4XXX	11
TOTAL GEN E	CD HOURS	30			
Electives					
		0		TOTAL MAJOR HOURS	87
TOTAL ELEC	TIVE HOURS	-3-		TOTAL HOURS	

Min. hours required	120	Earned Hrs
40 hours upper level	thru	minus P/C HRS
# of "D" hours	thru	to be completed
Max activity hours 4		TOTAL

** Satisfying Gen Ed • Satisfying Institutional Requirement # C or better must be earned for Gen Ed DOWNLOAD PDF

General Information

Navigate this section:

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF 📓

Bachelor of Science in Information Technology

DEPARTMENT HOMEPAGE The program in information technology prepares students for careers in administering and supporting the computing infrastructures of an organization. The curriculum consists of an integrated set of courses in networking, web development and administration, database development and administration, systems administration, and computer forensics.

Curriculum Track 1:

Programming, Database, and Web

Both matrices below are sample plans for all coursework required for Track 1 and Track 2.

Fall	Cradita	Saving	Con dite
1411	creatts	Spring	Creatts
ENGL 1013	3	ENGL 1023	3
Composition I ¹		Composition II ¹	
MATH 1113 College	3	MATH 2243 Calculus	3
Algebra ²		for Business and	
SS 1XXX Social	2	Economics ⁴	
Science Courses 1	3	COMS 1011	4
		Programming I Lab	
TECH 1001	1	and COMS 1013	
Orientation to the	1	Programming I	
University ³			
CSEC 1112	2	COMS 2703 Computer	3
Introduction to	5	Hardware and	
Maturalina		Architecture	
Networking		001/00	
COMS 1333 Web and	3	COMS 2713 Survey of	3
Mobile Technologies	5	Operating Systems 5	
TotalHours	15	Total Hours	16
Iotarnours	15		

Sophomore

Fall

Credits

Fall	Credits	Spring	Credits
SCIL 1XXX Science with Laboratory ¹	4	ENGL 2053 Technical Writing	3
COMS 2203 Programming II	3	COMS 2213 Data Structures	3
COMM 2173 Business and Professional Speaking ⁶	3	STAT 2163 Introduction to Statistical Methods	3
MATH 2703 Discrete Mathematics	3	COMS 2163 Scripting Languages	3
CSEC 2213 Network Forensics and Incident Response	3	Elective Total Hours	3 15
Total Hours	16		

Junior

Fall	Credits	Spring	Credits
SCIL 1XXX Science with Laboratory ¹	4	FAH 1XXX Fine Arts and Humanities	3
<u>COMS 3053 Ethical</u> Issues in Technology	3	Courses	3
<u>COMS 3233 Database</u> Design and	3	Programming COMS 3523 Human	3
Implementation		Factors in	5
COMS 3413 App Development	3	Information Technology	
Approved 3000-4000 level Elective	2	<u>COMS 3243 Data</u> <u>Mining</u>	3
Total Hours	15	Approved 3000-4000 level Elective	3
		Total Hours	15

×

V

Senior

		/	
Fall	Credits	Spring	Credits
<u>SS 1XXX Social</u> <u>Science Courses</u> ¹	3	FAH 1XXX Fine Arts and Humanities Courses ¹	3

https://www.atu.edu/catalog/current/undergraduate/colleges/science_technology_engineering_mathematics/engineering_computing_science_dept/co... 2/5
Fall	Credits	Spring	Credits
<u>USHG 1XXX U. S.</u> History and	3	COMS 4213 Database	3
<u>CovernmentU</u> S		Administration	
History and		COMS 4913 Capstone	3
Government 1	/	Approved 3000-4000	3
COMS 4033 Systems	3	level Elective	
Analysis and Design		Total Hours	12
COMS 4063 IT Project	3		
Administration			
Approved 3000-4000 level Elective	3		
Total Hours	15		

Curriculum Track 2:

Network and Security

Freshman

Fall	Credits	Spring
ENGL 1013	3	ENGL 10
Composition I ¹		<u>Composi</u>
MATH 1113 College	3	MATH 22
Algebra ²		for Busin
CSEC 1003 SS 1XXX Social	3	<u>Economi</u>
Science Courses 1		COMS 10
		Program
<u>TECH 1001</u>	1	and COM
<u>Orientation to the</u>		Program
University ³		
CSEC 1112		COMS 27
<u>CDEC III3</u>	3	Hardwar
Introduction to		Architect
Networking		Socia
COMS 1333 Web and	3	COMS 27.
Mobile Technologies	3	Operating
Total Hours	-16-	Total Ho
U		
	16	

Spring	Credits
ENGL 1023	3
Composition II ¹	
MATH 2243 Calculus	3
for Business and	
Economics ⁴	
COMS 1011	4
Programming I Lab	
and <u>COMS 1013</u>	
Programming I	
COMS 2703 Computer	3
Hardware and	
Architecture	2
Social Science	3
Operating Survey of	
Operating systems	
Total Hours	16

×

v

Sophomore

Fall	Credits		
SCIL 1XXX Science	4	Spring	Credits
with Laboratory ¹	-	ENGL 2053 Technical	3
		Writing	

https://www.atu.edu/catalog/current/undergraduate/colleges/science_technology_engineering_mathematics/engineering_computing_science_dept/co... 3/5

Fall	Credits	Spring	Credits
COMS 2203	3	COMS 2163 Scripting	3
Programming II	3	Languages Or Con	52323
COMM 2173 Business	_3	COMS 2213 Data	3
and Professional Speaking ⁶		Structures COMM2173	3
		<u>CSEC 2223</u>	
MATH 2703 Discrete Mathematics	3	COMS 27135	3
		Elective	-3-
<u>CSEC 2213 Network</u> Forensics and	3	Total Hours	15
<u>Incident Response</u>			
Total Hours	16		

Junior

Fall I	Credits
GOMS 3053 Ethical Issues in Technology	3-
<u>COMS 3233 Database</u> <u>Design and</u> Implementation	3
COMS 3363 Server Administration	3
<u>CSEC 3123 Cyber</u> Defense I	3
Approved 3000-4000 level Elective	3
Total Hours	15

Spring	Credits
SCIL 1XXX Science	4
with Laboratory ¹	
COMS 3373 Data	3
Center Operations Com5 3053 COMS 3523 Human	3
Factors in	
Information	
Technology	
CSEC 3233 Cyber	3
<u>Defense II</u>	
Approved 3000-4000	2
level Elective	
Total Hours	15

V

Senior

Fall COM 6 3523	Credits	Spring	Credits
FAH 1XXX Fine Arts and Humanities Courses	3	FAH 1XXX Fine Arts and Humanities Courses ¹	3
USHG 1XXX U.S. History and	3	COMS 4713	3
GovernmentU.S. History and Government ¹		Practicum Com 5 4933 COMS 4913 Capstone	3

https://www.atu.edu/catalog/current/undergraduate/colleges/science_technology_engineering_mathematics/engineering_computing_science_dept/co... 4/5

Bachelor of Science in Information Technology

Fall	Credits	Spring	Credits
SS 1XXX Social Science Courses ¹	3	Approved 3000-4000 level Elective	3
COMS 4063 IT Project Administration	3.	Total Hours	12
Approved 3000-4000 level Elective	3		
Total Hours	15		

¹ See appropriate alternatives or substitutions in "<u>General Education Requirements</u>".

² Student may waive this course by taking <u>MATH 2243 Calculus for Business and Economics</u> or <u>MATH 2314 Calculus I</u> instead and take an elective in its place.

³TECH 1013 Introduction to the University is a substitution for <u>TECH 1001 Orientation to the University</u>. Elective would reduce from 3 hours to 1 hour.

⁴ <u>MATH 2914 Calculus I</u> is a substitution for <u>MATH 2243 Calculus for Business and Economics</u>.

⁵ COMS 3703 Advanced Operating Systems is a substitution for COMS 2713 Survey of Operating Systems.

⁶ COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/22

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cynx	12/1/2022
Assessment	Mr And	12/5/22
Registrar	Jommy hearen	1/3/23
Graduate Dean (Graduate Proposals Only)	J	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: Associate of Applied Science in Cybersecurity Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

- Remove 10 hours:
 - o ELEG 2134/2130 Digital Logic and Lab
 - CSEC 2113 Introduction to Information Systems
 - U.S. History/Government
 - Add 10 hours:
 - o CSEC 1003 Introduction to Cybersecurity
 - o COMS 2323 Programming in Python
 - Elective 4 hrs

What impact will the change have on staffing, on other programs and space allocation?

- Multiple sections of CSEC 1003 will be needed, as it is being added to all computing degrees. We currently only have 2 Cybersecurity faculty on staff but have needed 3 for quite some time. The addition of this course (which was recommended by the state and will be good for recruiting) will further the need for an additional Cybersecurity faculty member.
- The Programming in Python course is also being added to all of the programs, but current faculty and/or adjuncts should be able to handle the load for that.
- Our current computer labs/classrooms can accommodate the new courses.

Answer the following Assessment questions:

- a. How does the program change align with the university mission? In keeping with ATU's mission of student success, removal of ELEG 2134/2130 will strengthen our students' success in our CSEC program. Cybersecurity students struggle in this course, as they don't have the background that the engineering majors have. The Programming in Python course is required for the BS Cybersecurity students and is a better fit for the AAS-CSEC degree.
- b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable.
 n/a
- c. What is the rationale for this program change?
 - 1. How will the program change impact learning for students enrolled in this program? As stated above, students will be more successful in the CSEC program.
 - 2. Provide an example or examples of student learning assessment evidence which supports the changes in the program. DFWI rates are high in ELEG 2134/2130; many of our students have communicated that they did not feel prepared for the course and struggled all the way through the course. CSEC instructors felt the addition of a database course and a Python course would strengthen their students' skills.
- d. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions. In looking at similar programs at other institutions, many do not require a course in digital logic for their Cybersecurity programs. In addition, our accrediting body (ABET) does not list skills from this course as required for accreditation. Many institutions require students to learn multiple programming languages.

e. Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.) Assessment plan has not changed; current plan on file with Assessment Office.

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

Since the restructuring, COMS and ELEG courses are now both under the same department. It has been internally communicated that there will be less demand for ELEG 2134/2130 since Cybersecurity students will no longer be taking the course.

Curriculum Matrix for Catalog			
Curriculum in AAS in Cybersecurity			
Freshman Fall Semester	Freshman Spring Semester		
Add/Change:	Add/Change:		
CSEC 1003 Introduction to Cybersecurity	Science with lab		
	Delete:		
Delete:	U.S. History/Government		
	CSEC 2113 Introduction to Information Systems		
Total Hours: 16	Total Hours: 14		
Sophomore Fall Semester	Sophomore Spring Semester		
Add (Changes	Add (Change)		
Add/Change: Add/Change:			
CSEC 2223 Virtualization	Add COMS 2323 Programming in Python		
Delete:	Change Elective from 2 hrs to 6 hrs		
ELEG 2134 Digital Logic and ELEG 2130 DL Lab	Delete:		
	Science with lab		
	CSEC 2223 Virtualization		
Total Hours: 15	Total Hours: 15		

In the attached matrix, include requested changes in the matrix and include course number and title.

DEGREE AUDIT CHECK LIST (AAS-CSE) Cybersecurity -2022-23_ 2023-24

Date			Student	's Name	
Grade Point	Graduation Date		T#		
General	Education Requirements	Hrs		Major Requirements	Hrs
ENGL #	1013/1043 & 1023/1053	6	CSEC	1113 1213 2113 2213 2223 1003	15
MATH #		0			
SCIENCE	1 A A A A A A A A A A A A A A A A A A A	4			
SCIENCE		0			
US HIST/GOVT		0-3-	COMS	1011 1013 2203 2213 2323	-10-
SOC SCI		3			
SOC SCI		0			
FINE ART/HUN	л	3			
FINE ART/HUN	л	0	СОММ	(2173** or 2003)	3
СОММ		0	ELEG	2130 2134	-4-
TECH 1001 ♦	(1001 or 1013)	1	MATH	(2243 or 2914#**) 2703	6
		17			
TOTAL GEN	ED HOURS	-20-			
Electives					
		in		TOTAL MAJOR HOURS	20
TOTAL ELEC	TIVE HOURS	-2-1		TOTAL HOURS	50
Einel Charles			L		
rmai Check:	40 hours upper leve	ed <u>60</u> el thru		Earned Hrs	
	# of "D" hou	rs thru		to be completed	,
	Max activity hours	4		ΤΟΤΑΙ	

** Satisfying Gen Ed
Satisfying Institutional Requirement
C or better must be earned for Gen Ed

DOWNLOAD PDF 📓

General Information

Navigate this section:

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF 📓

Associate of Applied Science in Cybersecurity

DEPARTMENT HOMEPAGE An Associates of Applied Science (AAS) in Cybersecurity graduate will understand the techniques used to compromise and infiltrate systems as well as the proven methods to protect data. The AAS in Cybersecurity degree includes courses in programming, wireless technologies, mathematics, and networking with focused concentrations in both theory and hands-on experience.

V

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Freshman

Fall	Credits	Spring	Credits
ENGL 1013	3	ENGL 1023	3
Composition I ¹		Composition II ¹	
FAH 1XXX Fine Arts	3	USHG 1XXX U.S.	-3-
and Humanities		History and	
Courses 1		Government U.S.	
		History and	
MATH 2243 Calculus for Business and	3	Government ¹	
Economics ³		COMS 1011	4
TECHANN		Programming I Lab	
<u>TECH 1001</u>	1	and COMS 1013	
<u>University</u> ²		Programming I	
CSEC 1110		<u>CSEC 2113</u>	3
<u>CSEC III3</u>	3	Introduction to	
<u>Networking</u>		Information Systems	
		CSEC 1213 Wireless	3
CSEC 1003	-13-	and Cellular Security	
	~	Total Hours	-16
	16	Science with	Lab
nhomore			

Associate of Applied Science in Cybersecurity

Fall	Credits	Spring	Credits
ELEG 2130 Digital Logic Design Lab and ELEG 2134 Digital Logic Design	-4-	COMM 2173 Business and Professional Speaking ⁴	3
COMS 2203 Programming II	3	with Laboratory ¹	3
MATH 2703 Discrete Mathematics	3	Structures	-2-1
CSEC 2213 Network Forensics and Incident Response	3	CSEC 2223- Virtualization	-3-
Social Science ¹	3	Total Hours	-15"
Total Hours	-16-	COM3 2323	C
CSEC 2223	3		15

¹ See appropriate alternatives or substitutions in "<u>General Education Requirements</u>"

² <u>TECH 1013 Introduction to the University</u> is a substitution for <u>TECH 1001 Orientation to the University</u>: Electives would reduce from 2 hours to 0 hours.

³ MATH 2914 Calculus I is a substitution for MATH 2243 Calculus for Business and Economics.

⁴ COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/22

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cynx	12/1/2022
Assessment	Charle and	12/5/22
Registrar	Sammy Culation	1/3/23
Graduate Dean (Graduate Proposals Only)	0	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: Associate of Applied Science in Information Technology

Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

- Remove 3 hours:
 - CSEC 2213 Network Forensics and Incident Response
- Add 3 hours:
 - CSEC 1003 Introduction to Cybersecurity

What impact will the change have on staffing, on other programs and space allocation?

- Multiple sections of CSEC 1003 will be needed, as it is being added to all computing degrees. We currently only have 2 Cybersecurity faculty on staff but have needed 3 for quite some time. The addition of this course (which was recommended by the state and will be good for recruiting) will further the need for an additional Cybersecurity faculty member.
- Our current computer labs/classrooms can accommodate the new courses.

Answer the following Assessment questions:

- a. How does the program change align with the university mission? The Network Forensics course is being removed in favor of more generic Intro to Cybersecurity course – which will be part of the ACTS and will be beneficial with recruitment.
- b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable. n/a
- c. What is the rationale for this program change?
 - How will the program change impact learning for students enrolled in this program? The Network Forensics course was added last year in an effort to include a cybersecurity course in the curriculum. However, the course has proved very specific and the faculty feel that a more generic course is a better fit for students who aren't majoring in cybersecurity.
 - 2. Provide an example or examples of student learning assessment evidence which supports the changes in the program. Feedback from both students and faculty, as well as move across the state to include a similar course in all computing curriculums, lead to this change.
- d. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions. As mentioned above, there is a move across the state to include a similar course in all computing curriculums.
- e. Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.) Assessment plan for AASIT has not changed; current plan on file with Assessment Office.

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

n/a

Curriculum Matrix for Catalog			
Curriculum in AAS in Information Technology			
Freshman Fall Semester	Freshman Spring Semester		
Add/Change:	Add/Change:		
CSEC 1003 Introduction to Cybersecurity	Social Science		
Delete:	Delete:		
Social Science	COMS 2713 Survey of Operating Systems		
Total Hours: 16	Total Hours: 16		
Sophomore Fall Semester	Sophomore Spring Semester – no change		
Add/Change: COMS 2713 Survey of Operating Systems	Add/Change:		
Delete:			
CSEC 2212 Notwork Foronsies and Insident Demonstra			
CSEC 2213 Network Forensics and incident Response			
Total Hours: 16	Total Hours: 12		

In the attached matrix, include requested changes in the matrix and include course number and title.

DEGREE AUDIT CHECK LIST (AAS-ITAS) Information Technology

22-23	20	23
		VIJ

Date			Student's	Student's Name	
Grade Point	Graduation Date		T#		
General	Education Requirements	Hrs		Major Requirements	Hrs
ENGL#	1013/1043 & 1023/1053	6	COMS	1011 1013 1333 2203 2703	16
MATH #		0		(2713 or 3703)	
SCIENCE		4	CSEC	1113 2213 100 3	6
US HIST/GOVI	ſ	0			
SOC SCI		3			
FINE ART/HUN	м	0	СОММ	(2173 or 2003**)	3
СОММ		0	ENGL	2053	3
TECH 1001 •	(1001 or 1013)	1	MATH#	1113 or higher**	3
TOTAL GEN	ED HOURS	14			
Electives					
				TOTAL MAJOR HOURS	31
TOTAL ELEC	TIVE HOURS	15		TOTAL HOURS	

Final Check:	Min. hours required 60	Earned Hrs
	# of "D" hours thru	minus P/C HRS
	Max activity hours 4	to be completed
		TOTAL

** Satisfying Gen Ed Satisfying Institutional Requirement # C or better must be earned for Gen Ed DOWNLOAD PDF

General Information

Navigate this section:

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF 📙

Associate of Applied Science in Information Technology

DEPARTMENT Homepage

V

The Associate of Applied Science in Information Technology program enables students to develop skills in the areas of web processing, databases, networking, programming, and various operating systems. These skills enable students to seek positions within the information technology industry.

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Freshman

Fall	Credits
ENGL 1013	3
Composition I ¹ CSEC 1003 Social Science ¹	3-3-
MATH 1113 College	3
Algebra or higher-	
level Mathematics	
TECH 1001	1
Orientation to the	
University ²	
COMS 1333 Web and	3
Mobile Technologies	
CSEC 1113	3
Introduction to	
Networking	
Total Hours	16

Spring	Credits
ENGL 1023	3
Composition II ¹	
COMS 1011	4
Programming I Lab	
and <u>COMS 1013</u>	
Programming I	
COMS 2703 Computer	3
Hardware and	
Architecture Social Science	3
COMS 2713 Survey of	3
Operating Systems ³	
Elective	3
Total Hours	16

v

Sophomore

Fall	Credits	
	010010	Spring
SCIL 1XXX	4	
Science with		COMM 2173 Business
Laboratory 1		and Professional
COMS 2203	3	Speaking ⁴
Programming		ENGL 2053 Technical
Coms 27	3 3	Writing
CSEC 2213	-3-	Electives ⁵
Network		
Forensics and		Total Hours
Incident		
Response-		
Elective ⁵	6	
Total Hours	16	

¹ See appropriate alternatives or substitutions in "<u>General Education Requirements</u>"

² <u>TECH 1013</u> Introduction to the University is a substitution for <u>TECH 1001</u> Orientation to the University. Electives would reduce from 15 hours to 13 hours.

³ COMS 3703 Advanced Operating Systems is a substitution for COMS 2713 Survey of Operating Systems.

⁴ COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.

⁶ Students seeking a Bachelor's degree in computing should take courses that count towards that degree rather than just

general electives.

~

Credits

3

3

6

12



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Engineering and Computing Sciences	11/21/22

Title	Signature	Date
Department Head	John L. Krohn	12/1/2022
Dean	Juny & Cynx	12/1/2022
Assessment	Chu Lant	12/5/22
Registrar	yammy fulgille	113123
Graduate Dean (Graduate Proposals Only)		
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: CP in Computer Networking Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

- Change program to require ONE of: CSEC 1213 Wireless and Cellular Security or COMS 2703 Computer Hardware and Architecture (certificate currently requires both courses)
- Add CSEC 2213 Network Forensics and Incident Response

NOTE: Certificate stays at 12 hours

What impact will the change have on staffing, on other programs and space allocation? **none**

Answer the following Assessment questions:

- a. How does the program change align with the university mission? To enhance student success, it is best to utilize courses that are already part of the required courses in our programs. CSEC 1213 was not required for the majority of our programs, whereas CSEC 2213 is required.
- b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable. **n/a**
- c. What is the rationale for this program change?
 - How will the program change impact learning for students enrolled in this program? Changing the course requirements will allow students to earn a CP, AAS, and BS – stackable degrees. As students progress through the required courses, their knowledge is expanded as each course builds on previous courses.
 - 2. Provide an example or examples of student learning assessment evidence which supports the changes in the program. **n/a**
- d. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions. **Courses required for this certificate are comparable to other similar CPs of this nature.**
- e. Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.) Assessment plan has not changed.

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.
n/a

In the attached matrix, include requested changes in the matrix and include course number and title.

No matrix needed for CP (per Alexis)

Curriculum Matrix for Catalog		
Freshman Fall Semester	Freshman Spring Semester	
Add/Change:	Add/Change:	
Delete:	Delete:	
Total Hours:	Total Hours:	
Sophomore Fall Semester	Sophomore Spring Semester	
Add/Change:	Add/Change:	
Delete:	Delete:	
Total Hours:	Total Hours:	
Junior Fall Semester	Junior Spring Semester	
Add/Change:	Add/Change:	
Delete:	Delete:	
Total Hours:	Total Hours:	
Senior Fall Semester	Senior Spring Semester	
Add/Change:	Add/Change:	
Delete:	Delete:	
Total Hours:	Total Hours:	

DOWNLOAD PDF

General Information

Navigate this section:

Introduction

Academic Calendar

Programs of Study

Fees & Expenses

Financial Aid

Scholarships

University Honors

College Distinction

Military Science

Catalog PDF

Admission

This program will provide students with DEPARTMENT foundational skills of computer networking and HOMEPAGE computer hardware concepts, which could lead to an industry certification in computer networking (Network+) and/or in PC Administration & Faculty Repair/Maintenance (A+). The certificate of proficiency in Computer Networking requires the following 12 semester credit hours: CSEC 1113 Introduction to Networking ACTS Course Transfer System COMS 2703 Computer Hardware and Architecture <u>CSEC 1213 Wireless and Cellular Security</u> or Coms 2703 Student Affairs Operations <u>CSEC 2223 Virtualization</u> CSEC 2213 Curriculum The curriculum below is a sample plan for all coursework required for this program. **Regulations & Procedures First Year** Fall Graduation Requirements CSEC 1113 Introduction to Networking **General Education Requirements** COMS 2703 Computer Hardware and Architecture Spring <u>CSEC 1213 Wireless and Cellular Security</u> <u>CSEC 2223 Virtualization</u>

Certificate of Proficiency in Computer Networking

https://www.atu.edu/catalog/current/undergraduate/colleges/science_technology_engineering_mathematics/engineering_computing_science_dept/co...

DEGREE AUDIT CHECK LIST (CP-CN Computer Networking)

Date		Student's Name		
Grade Point Graduation Date		T# Minor Requirements		
General Education Requirements	Hrs			
ENGL #		CSEC	1113 1213 2223 8 2 13	9
MATH #		COMS	2703 or CSEC 1213	3
SCIENCE				
US HIST/GOVT				
SOC SCI				_
FINE ART/HUM				_
				_
СОММ				
TECH 1001 +				_
TOTAL GEN ED HOURS				_
			TOTAL HOURS (12)	
TOTAL ELECTIVE HOURS (0)			TOTAL HOURS	

Final Check:

Min. hours required 12 Earned Hrs _____ to be completed _____ TOTAL _____

Must have 2.00 in minor Must have minimum of 6 hours in residence Must use same catalog for both major and minor



REQUEST FOR COURSE ADDITION

Department Initiating Proposal	Date
Department of Physical and Earth Sciences	
	11/29/2022

Title	Signature	Date
Department Head		11/30/2022
Dr. Hamed Shojaei		
Dean Dr. Judy L. Cezeaux	Juny & Cyric	12/1/2022
Assessment	Chin L. Austin	12/5/22
Registrar	Jamming becauser	1/3/23
Graduate Dean (Graduate Proposals Only)	()	
Vice President for Academic Affairs		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Course Subject: (e.g., ACCT, ENGL)	Course Number: (e.g., 1003)	Effective Term:
PHYS	4061	Spring C Summer I
Official Catalog Title: (If official title e	xceeds 30 characters, indicate Banne	r Title below)
Engineering Physics Design		
Banner Title: (limited to 30 characters,	including spaces, capitalize all letters — t	his will display on the transcript)
Engineering Physics Design		

Will this c	ourse be cross-list	ted with anothe	er existing co	urse? If so, list	course sub	ject and number.
CYes @	No					
Will this c	ourse be cross-list	ted with a cours	se currently r	ot in the unde	rgraduate o	or graduate catalog?
lf so, list c	ourse subject and	Inumber. CY	es 🖲 No			
ls this cou	rse repeatable for	r additional ear	ned hours?	(Yes (No Howm	nany total hours?
Grading:	Standard Let	tter	ſ P/F	C	Other	
Mode of I	nstruction (check	appropriate bo	x):			
C 01 Lectu	re	C 02 Lecture/	Laboratory	C 03 Labor	atory only	
C 05 Practi	ce Teaching	C 06 Internshi	ip/Practicum	C 07 Appre	enticeship/Ex	ternship
08Indep	endent Study	C 09 Readings		C 10 Speci	al Topics	
C 12 Indivi	dual Lessons	13 Applied	Instruction	C 16 Studi	o Course	
C 17 Disser	rtation Research	C 18 Activity (Course	C 19 Semir	nar	C 98 Other
Does this	course require a f	ee? 🔎 Yes	CNo Ho	w Much?	40 C	Other
If selected	l other list fee type	e:			line a	
Elective	3	🔽 Majo	r	☐ Minc	or	
If course is On dem Will this co software,	s required by majo and ourse require any distance learning	or/minor, how f special resourc equipment, etc	requently wi es such as un .? NO	ll course be off usual mainten	ered? ance costs,	library resources, special
Will this co NO Answer th	ourse require a sp e following Assess	ecial classroom	(computer la	ab, smart classi	room, or lal	boratory)?
a. If nc AE <i>[tl</i> <i>ap</i> <i>sk</i>	this course is man ot applicable. BET Engineering Au ne program must i ppropriate enginee ills acquired in ear	dated by an acc ccreditation Co include] a culmi ering standards flier course wor	crediting or commission Crimating major and multiple k.	ertifying agenc terion 5.d: engineering de constraints, ar	y, include t esign exper nd 2) is base	he directive. If not, state ience that 1) incorporates ed on the knowledge and
b. If	this course is requ 1. Provide the	ired for the ma program-level	jor or minor, learning outc	complete the ome(s) it addre	following. esses.	
j	Capstone will add	ress the Engine	ering Physics	Program learn	ing outcom	es 1-4 and 6-7:
1)	an ability to ide of engineering,	ntify, formulate science, and m	e, and solve c athematics	omplex engine	ering probl	ems by applying principles

- 3) an ability to communicate effectively with a range of audiences
- 4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- 6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- 7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
 - 2. Provide tool or measure directly linked to each program learning outcome. (How will student learning in this outcome be measured?)

See attached document titled "Physics Program Assessment: Engineering Physics Design"

c. What is the rationale for adding this course? What evidence demonstrates this need? This course is will meet the ABET curriculum requirement for a "culminating engineering design experience". For the proposed course, attach a syllabus in Word format that includes: (Items a. through d. should be entered as they should appear in the catalog)

- a. Course subject
- b. Course number
- c. Catalog course title
- d. Catalog description
 - 1. Arkansas Course Transfer System (ACTS) course number, if applicable
 - 2. Cross-listing
 - 3. Offered (e.g., Fall only, Spring only. Do not enter if offer course fall and spring)
 - 4. Prerequisites
 - 5. Co-requisites
 - 6. Description
 - 7. Notes (e.g., information not in description such as course may be repeated for credit)
 - 8. Contact Hours if different than lecture (e.g., Lecture three hours, laboratory three hours)
 - 9. Fees (e.g., \$36 art fee)
- e. Section for Name of instructor, office hours, contact information (telephone, email)
- f. Text required for course
- g. Bibliography (supplemental reading list)
- h. Justification/rationale for the course
- i. Course objectives
- j. Description of how course meets general education objectives (courses included in the general education component should show how the course meets one or more of the objectives contained in General Education Objectives listed in undergraduate catalog)
- k. Assessment methods (include grading policy with specific equivalents for A, B, C)
- I. Policy on absences, cheating, plagiarism, etc.
- m. Course content (outline of material to be covered in course).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

Physics Program Assessment: Engineering Physics Design

Program learning outcomes 1-4 and 6-7 are to be assessed in Engineering Physics Design. The program learning outcomes will be measured using the following performance indicators

PLO 1: an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Project proposal	The problem should be considered complex blem
cts appropriate method to solve the prol	blem
Assessment Method	Notes
Project proposal	
Project proposal, notebook, and oral	
	Project proposal Project proposal, notebook, and oral presentation

PLO 2: an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Performance indicator: Design the needed system or develop the computer code to solve the problem at hand.		
Component	Assessment Method	Notes
Defines need and problem to be solved	Project proposal	public health, safety, and welfare, as well as global, cultural, social, environmental, and economic, factors should be considered, as appropriate
Defines constraints	Project proposal	
Prototype/model/code created and validate that meets needs	A written report and oral presentation	

PLO 3: An ability to communicate effectively with a range of audiences.

Performance indicator: Prepare variety of backgrounds.	an oral presentation and present to an	audience of peers from a
Component	Assessment Method	Notes
Organization	Oral presentation at ATU undergraduate research symposium. All physics program faculty assess using program rubric	Ideas should be clearly organized to achieve a clear purpose.
Adaptation to audience		Keep the audience engaged – the level of the topic presentation should be colloquial (avoid jargon)
Delivery		Confident/ natural delivery. Clearly prepared. Appropriate clothing.
Performance indicator: Prepare	a written report with professionals in t	he field as the audience
Organization	Written report. Assessed by advisor using program rubric	The format should meet a physics or engineering journal requirements
Content		

٦

PLO 4: an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Performance indicator: Recognition of ethical dilemma		
Component	Assessment Method	Notes
Identifies ethical dilemma	Meetings with the professor, lab notebook, and oral	It is possible no ethical dilemmas exist for a chosen
Identifies stakeholders (those that might be affected by the dilemma)	lab notebook, and oral presentation. Program rubric	project but this needs to be considered in terms of the possible impact the solution might have in global, economic, environmental, and societal contexts

PLO 6: an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Performance indicator: Plan experiments to test different hypotheses, analyze the data, and recommend new ideas to improve the experiment.		
Component	Assessment Method	Notes
Plan experiments	project proposal and lab notebook	
Use fundamental laws of physics to fit models to, analyze and interpret data	Written report – program rubric	
Use engineering principles to analyze the output or product	Written report – program rubric	

PLO 7: an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Component	Assessment Method	Notes
Acquires new information	Project Proposal	Must examine widely known sources that are reliable
Applies new knowledge	Lab notebook, oral presentation, and written report – program rubric	

PHYS 4061: Engineering Physics Design

- I. <u>General Information</u>:
 - a. Instructor:
 - b. Office:
 - c. email:
 - d. Office Hours:
- II. <u>Course Description</u>: This course is meant to serve as a culminating experience during Engineering Physics students' final semester. Supervised by a faculty member, students carry out engineering design activities relating to a significant problem that is based on physics and engineering skills and knowledge acquired in previous coursework. A formal written report and oral presentation are required. Corequisite: Engineering Physics major with senior standing. \$40 course fee.
- III. <u>Textbook</u>: None required
- IV. <u>Course Rationale</u>: Students will gain experience and insight into the process of engineering design by being involved in the planning, implementation, analysis, and reporting of a design project.
- V. Course Objectives: By the end of this course, students will
 - Implement knowledge and skills acquired in earlier coursework to solve an engineering need or problem that incorporates appropriate engineering standards and multiple constraints.
 - b. Demonstrate an ability to communicate effectively with a range of audiences
- VI. <u>Expectations:</u> Students are expected to work 3-4 hours per week. The student's work will be documented in a lab journal which should include detailed information about activities in the lab or outside the lab that pertain to the project at hand (i.e. weekly planning meetings w/ the instructor, etc.). Students are expected to generate a proposal and a final report for their project written in the format of a journal appropriate for the topic. A formal presentation is also required.
- VII. <u>Grading</u>: The student's grade will be based on evaluation in four areas: Effort, Design Proposal, Final Written Report, and Oral Presentation
 - 1) **Effort** 30% (*effort is assessed via attendance, quality/completeness of lab journal, attention to details of the project, etc.*)
 - 2) **Project Proposal** 10% (see outline below)
 - 3) Final Written Report 30% (see below for paper outline)
 - 4) **Oral Presentation** 30% (students are expected to present at the ATU undergraduate research symposium if graduating in a spring semester. Other presentation venues may be approved by the department)

Grading Scale: A = 90-100%; B = 80-89%; C 70-79%; D 60-69%; F = <60%

VIII. <u>Class Policies</u>:

- The student will follow safety guidelines as outlined by the instructor
- Academic honesty is expected and required. Plagiarism will not be tolerated. If you are unsure as to what constitutes plagiarism, please speak with me directly. (*see the ATU Student Handbook for details for the consequences of academic dishonesty*)
- IX. Note: This syllabus is subject to change at the discretion of the instructor
- A. Project Proposal: An Outline for the Capstone Project Proposal follows
 - 1. **Title Page**: This should be a separate cover page. Include the Title of the Proposal, your Name, Date, Class, Instructor
 - 2. Introduction and Background Information: In this section, you should state the basis of the study. Include background information and a statement of purpose. Why is the project worthwhile? What other work has been done that relates to this question? Number your citations in order of appearance in the text. A minimum of 3 primary literature sources related to your topic is expected.
 - 3. **Hypothesis and/or Engineering problem**: State the specific hypothesis and you intend to test and/or the engineering problem to be solved.

4. Materials and Methods:

- a. **Model:** Describe the experimental model. Include information about how you selected the model (organism). Why did you feel this model was most appropriate for you purpose? What are the advantages and disadvantages of your model? Are there other models that might have been used?
- b. List of equipment and supplies:
- c. **Methodology**: Describe the experimental and engineering design, experimental methods, materials used, and planned method of statistical analysis, as appropriate to the problem.
- 5. Timeline: Outline your proposed timeline (Grant chart) for the project completion.

Note: The Proposal should be submitted by the end of the 3^{rd} week of class. You are encouraged to take the time to review a draft with your instructor prior to the due date. (i.e. discuss your progress at the weekly meeting.)

B. Final Report: An Outline for a Final Report follows. This outline may be used for most reports, or you may use the specific format used by one of the scientific journals that you used in your design. Follow their instructions for authors.

- 1. **Title page:** This should be a separate cover page. Include the Title of the project (indicate that it is a Final Report), Name, Date, Class, and Instructor.
- 2. Abstract: The abstract should be a concise paragraph (<250 words) outlining your project and results. Include enough information to give the reader an idea about the purpose of the project, an outline of the experimental design, and a *brief* statement regarding results and your interpretation of the results. Do not cite references, figures, tables or specific results. This is a synopsis of your project. (Hint: write the abstract *after* you finish the rest of your report.)
- **3. Introduction and Background Information:** In this section, you should state the basis of the study. Include background information and a statement of purpose. Why is the project worthwhile? What other work has been done that relates to this question? Number your citations in order of appearance within the text. Any ethical considerations should be addressed in this section. The project hypothesis and/or engineering problem can be included at the end of this section.

4. Materials and Methods:

- **a. Model:** Describe the experimental model. Include information about how you selected the model (organism). Why did you feel this model was most appropriate for your purpose? What are the advantages and disadvantages of your model? Are there other models that might have been used?
- **b. Design and Methodology:** Describe the experimental design, experimental execution, materials used, and the method of statistical analysis. Alternate methods to the problem, solution, and a model or prototype should be discussed in this section.
- 5. **Results:** Report the results of your project in this section. Do not attempt to explain or interpret results simply state them. And remember, negative results are still results. Present data in an appropriate format: table, chart, figure. Cite tables and figures in numerical order as they appear in the text. The tables and figures should be included in the text of the paper.
- Discussion: Discuss your results in this section. Did the data support or refute your hypothesis? Do your results validate the design? If the data is inconclusive, identify this and then include suggestions for future studies.
- 7. **References Cited:** List citations in the order in which they appeared in the text. Citations should be in MLA, APA, or a format appropriate for a journal article in the field. A minimum of 3 primary literature sources should be included.

C. Presentation:

1. Formal presentation at the ATU Undergraduate Research Symposium in the spring of each academic year is required. Exceptions to this rule require professor and department approval.

2. Formal presentations must be submitted to the professor for review and approval 1 week before the presentation is to be given.

INSTRUCTOR - ADD dated timeline with deliverables



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Physical and Earth Sciences	
	11/29/2022

Title	Signature	Date
Department Head		11/30/2022
Dr. Hamed Shojaei		
Dean Dr. Judy L. Cezeaux	Juny & Cynx	12/1/2022
Assessment Dr. Christine Austin	The that	12/5/22
Registrar Ms. Tammy Weaver	Ammi flueauer	1/3123
Vice President for Academic Affairs Dr. Julie Furst-Bowe		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: Engineering Physics

Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

Delete:

- 1. MCEG 1002
- 2. 4 hours of ELEG/MCEG/COMS (3000-4000 level) electives
- 3. PHYS 4951

MOVE:

- 1. Move MCEG 3013 to spring Junior
- 2. Move MCEG/ELEG 4202 to fall senior
- 3. Move MCEG 3313 to the spring of Junior

ADD:

- 1. COMS 2203 2323 Programming in Python
- 2. COMS 2303 4061
- 3. PHYS 4601 (*NEW COURSE* Engineering Physics Design)

Answer the following Assessment questions:

a. How does the program change align with the university mission? Arkansas Tech is dedicated to student success and excellence. Some courses, required for the engineering physics degree, offered by other departments have changed in a way that it is necessary for the required course to be changed. Additionally, we are specifying two new courses and removing four hours of electives. This change is to ensure that students have skills employers would expect of our graduates.

b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable.
 The addition of the Engineering Physics Design course will help us satisfy the ABET accreditation criteria for engineering programs.

c. What is the rationale for this program change?

Replacing some of the ELEG/MCEG/COMS elective courses with specific COMS classes for engineering physics majors will prepare students for the current challenges that graduates will face. Additionally, the Engineering Design Course is to be added to the curriculum to meet ABET Engineering Accreditation Commission Criterion 5.d:

[the program must include] a culminating major engineering design experience that 1) incorporates appropriate engineering standards and multiple constraints, and 2) is based on the knowledge and skills acquired in earlier course work.

- b. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions.
 In order to make our engineering physics program more attractive to students, we need to make sure it is accredited by ABET. Several successful engineering physics programs have accreditation. Currently, Henderson State, John Brown University, and Southern Arkansas University have accredited engineering programs where that offer engineering physics as an option.
- c. Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.)

There will be no change to our assessment plan, since the courses added or deleted were not part of our assessment (They are all from other departments). The only new course that is housed in our department is PHYS 4601, replacing PHYS 4951. The assessment criteria for PHYS 4601 are included in the attached form.

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

Tammy Weaver

From:	Rebecca Cunningham
Sent:	Wednesday, January 4, 2023 5:19 PM
То:	Tammy Weaver
Subject:	Re: Curriculum Program Change for Physics and Engineering Physics

Yes, we can handle a small amount of additional students. I was afraid he was going to say like 20-30 a year and we can't handle another section anytime in the near future! But 4-5 we can do. 🙂

Mrs. Becky Cunningham, Assistant Professor Program Director for Computer Science & Information Technology Department of Engineering and Computing Sciences Arkansas Tech University Office: Corley 232 Phone: 479.880.4610 Virtual meeting room: <u>https://atu.webex.com/meet/rcunningham</u>

From: Tammy Weaver <tweaver@atu.edu>
Sent: Wednesday, January 4, 2023 5:02 PM
To: Rebecca Cunningham <rcunningham@atu.edu>
Subject: RE: Curriculum Program Change for Physics and Engineering Physics

Becky

I have just started reviewing these Physics proposals. Can you support the changes?

Thanks.

Tammy

Tammy Weaver, Registrar Arkansas Tech University Office of the Registrar Brown Building, Suite 307 105 West O Street Russellville, AR 72801-2222

Telephone: 479.968.0643 Fax: 479.968.0683 Email: <u>tweaver@atu.edu</u>

Please take a minute to complete this survey on the service you received. <u>http://www.atu.edu/registrar/survey.php</u>


Curriculum M Curriculum in Engineerie	atrix for Catalog
(enter title for p	rogram changing)
Freshman Fall Semester	Freshman Spring Semester
Add/Change:	Add/Change:
Delete:	Delete:
Total Hours: 16	
	Total Hours:15
Sophomore Fall Semester	Sophomore Spring Semester
Add/Change: COMS 2203	Add/Change:
Delete: MCEG 1002	Delete:
	Total Hours: 15
Total Hours:17	
Junior Fall Semester	Junior Spring Semester
Add/Change: COMS 2303 2323	Add/Change: MCEG 3013 & MCEG 3313
Delete	an ann a' fhairteagaine ann ann a' fhairne fair ann an tar ann an tar
Total Hours: 16	Delete Delete: Move MCEG/ELEG 4202 to fall senior Delete ELEG/MCEG/COMS 3000-4000 level
	Iotal Hours: 15 Electives 3 hrs
Senior Fall Semester	Senior Spring Semester
Add/Change: MCEG 4202	Add/Change: PHYS 4061 Engineering Physics Design
Delete: Move MCEG 3313 to the spring of Junior	Change 3 hr of COMS/ELEG/ MCEG 3000-4000 to 2 hr of COMS/ ELEG/ MCEG 3000- 4000
And delete 3 hours ELEG/MCEG/COMS elective (3000- 4000 level)	Delete: PHYS 4951
Total Hours:14	Total Hours:12

In the attached matrix, include requested changes in the matrix and include course number and title.

2023-24

Engineering Physics Proposed 2022-2023 Degree

Semester 1 - fall	Hrs.	Grade	Semester 1
ENGL 1013: Comp I (ACTS=ENGL 1013)	3	#	
PHSC 1001: Orientation to Physical Science	1		
MATH 2914: Calculus I (ACTS= MATH 2405)	4		
COMS 1013/1011	4		
CHEM2124/2120:Gen. Chem. I (ACTS=CHEM1414) MILESTONE	4		
Total hours	16	GPA	

Semester 2 - spring	Hrs.		Semester 2
ENGL 1023: Comp II (ACTS= ENGL 1023)	3	#	
PHSC1011: Orientation to Physical Science II	1		No substitutions allowed.
MATH2924: Calculus II (ACTS= MATH2505)	4		
MCEG2023: Engineering Materials	3		
PHYS 2114/2000: General Physics I (ACTS=PHYS 2034)	4		
Total hours	15	GPA	

Semester 3 – fall	Hrs.		Semester 3
Social Sci/Fine Arts/Humanities/Comm 55	3		
MATH2934: Calculus III (ACTS= MATH 2603)	4		
PHYS 2124/2010: General Physics II (ACTS=PHYS 2044)	4		and a second
MCEG 2013 Statics	3		
COMS 2203: programming II	3		
Total hours	17	GPA	

Semester 4 – spring	Hrs.		Semester 4
U.S. History & Government	3		
MATH3243: Differential Equations I	3		
PHYS 3213 Modern Physics	3		
ELEG2103: Electric Circuits I	3		
MCEG 2033 Dynamics	3		
Total hours	15	GPA	PHYS ADVISOR ASSIGNED

Semester 5 – fall	Hrs.	Grade	Semester 5
Social Sci/Fine Arts/Humanities	3		
PHYS 3023 Mechanics (even) or PHYS 4013 QM (odd)	3		
ELEG 2111 and ELEG 2113: Electric Circuits II and Lab	4		
PHYS 3133 EM (even) or PHYS 4023 Computational physics (odd)			
	3		
COMS-2303-programming in Python 23223	3		
Total hours	16	GPA	

Semester 6 – spring	Hrs.		Semester 6
Social Sci/Fine Arts/Humanities USHC	3		
PHYS 3003 Optics (even) or PHYS 4113 advanced lab (odd)	3		
PHYS 4213/MATH UD elective (even) or PHYS 4003 Statistical Mechanics and Thermodynamics (odd)	3		
MCEG 3313: Thermodynamics 1	3		
MCEG3013 Mech of Materials	3		
Total hours	15	GPA	APPLY FOR GRADUATION

2023-24 Engineering Physics Proposed 2022-2023 Degree

Semester 7 – fall	Hrs.		Semester 7
MCEG4403: Mechanics of Fluids and Hydraulics	3		
PHYS 3023 Mechanics (even) or PHYS 4013 QM (odd)	3		
ELEG/MCEG/COMS Elective	3		
PHYS 3133 EM (even) or PHYS 4023 Computational physics (odd)	3		
MCEG\ELEG 4202 – Engineering design	2		
Total hours	14	GPA	

Semester 8 – spring	Hrs.		Semester 8
PHYS 3003 Optics (even) or PHYS 4113 advanced lab (odd)	3		
PHYS 4213/MATH UD elective (even) or PHYS 4003 Statistical Mechanics and Thermodynamics (odd)	3		Graduation Requirements:
MCEG4443: Heat Transfer	3		Min. hours 3000-4000 level courses: 40
PHYS 4601 Capstone 4061	1		No more than 4 PE activity hours
ELEG/MCEG/COMS Elective (3000-4000 level)	2		Min. hours required:120
Total Hours	12	GPA	2.00+ GPA
			No more than 12 hours of "D" grades

Total hours = 120

Physics Program Assessment: Engineering Physics Design

Program learning outcomes 1-4 and 6—7 are to be assessed in Engineering Physics Design. The program learning outcomes will be measured using the following performance indicators

PLO 1: an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

approached systematically		able solution that can be
Component	Assessment Method	Notes
Identifies a problem	Project proposal	The problem should be considered complex
Performance indicator: Sel Component	ects appropriate method to solve the prob Assessment Method	Notes
Performance indicator: Sel Component Appropriate method	ects appropriate method to solve the prob Assessment Method Project proposal	Notes

PLO 2: an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Component	Assessment Method	Notes
Defines need and problem to be solved	Project proposal	public health, safety, and welfare, as well as global, cultural, social, environmental, and economic, factors should be considered, as appropriate
Defines constraints	Project proposal	
Prototype/model/code created and validate that meets needs	A written report and oral presentation	

PLO 3: An ability to communicate effectively with a range of audiences.

Component	Assessment Method	Notes
Organization	Oral presentation at ATU undergraduate research symposium. All physics	Ideas should be clearly organized to achieve a clear purpose.
Adaptation to audience	program faculty assess using program rubric	Keep the audience engaged – the level of the topic presentation should be colloquial (avoid jargon)
Delivery		Confident/ natural delivery. Clearly prepared. Appropriate clothing.
Performance indicator: Prepare	a written report with professionals in t	he field as the audience
Organization	Written report. Assessed by research advisor using program rubric	The format should meet a physics or engineering journal requirements
Content		

PLO 4: an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Component	Assessment Method	Notes
Identifies ethical dilemma	Research meetings with the professor, lab notebook, and	It is possible no ethical dilemmas exist for a chosen
Identifies stakeholders (those that might be affected by the dilemma)	oral presentation. Program rubric	project but this needs to be considered in terms of the possible impact the solution might have in global, economic, environmental, and societal contexts

PLO 6: an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

recommend new ideas to improve the experiment.			
Component	Assessment Method	Notes	
Plan experiments	project proposal and lab notebook		
Use fundamental laws of physics to fit models to, analyze and interpret data	Written report – program rubric		
Use engineering principles to analyze the output or product	Written report – program rubric		

PLO 7: an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Component	Assessment Method	Notes
Acquires new information	Project Proposal	Must examine widely known sources that are reliable
Applies new knowledge	Lab notebook, oral presentation, and written report – program rubric	

DEGREE AUDIT CHECK LIST (BS-ENPH) Engineering Physics

Date	c		Student's Na	ime	
Grade Point	Graduation Date		T #		
General E	ducation Requirements	Hrs		Major Requirements	Hrs
ENGL#	1013/1043 & 1023/1053	6	PHYS	2000 2010 2114 2124 3003 3023	
MATH #		0		3133 3213 4003 4013 4023 4113	
SCIENCE		0	PHYS	4957 4061	
US HIST/GOVT		3		PHYS 4213 or 3 hrs UD MATH	36
SOC SCI		3		*exclude Math 3003, 3033, 4113	
SOC SCI		0			
SOC SCI		0	СНЕМ	2124 2120	4
FINE ART/HUM		3	COMS	1011 1013 2203 2323	10
FINE ART/HUM		3	ELEG	2103 2111 2113	7
FINE ART/HUM		0	МАТН	2914#** 2924 2934 3243	15
СОММ		0	MCEG	1002 2013 2023 2033 3013	
TECH 1001 •		0		3313 4403 4443	21 23-
TOTAL GEN E	DHOURS	18	ELEG/MCEG	4202	2
Electives			/MCEG/COM	(9UD)	5
			PHSC	1001 • 1011	2
			C or	better in a MATH for Gen Ed	
				TOTAL MAJOR HOURS	102
FOTAL ELECT	IVE HOURS	0		TOTAL HOURS	

Final Check	
--------------------	--

Min. hours required 120 40 hours upper level thru # of "D" hours thru Max activity hours 4



** Satisfying Gen Ed
 Satisfying Institutional Requirement

C or better must be earned for Gen Ed

DOWNLOAD PDF

General Information

Navigate this section:

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF 📓

Bachelor of Science in Engineering Physics

DEPARTMENT HOMEPAGE

Students graduating with an engineering physics degree will be well qualified for jobs requiring highly technical skills and theoretical knowledge. Also, the degree program will prepare students for graduate studies in the fields of physics and engineering. However, those interested in employment immediately after graduation will have numerous alternatives for career choices. Job opportunities for an engineering physics graduate could include employment in industries such as: McDonnell Douglas/Boeing, Texas Instruments, Honeywell, Microsoft, Polaroid, Union Carbide, National Institute of Standards; Technology, Entergy, Tennessee Valley Authority, and Dow Chemical. Also, government agencies such as NASA, National Bureau of Standards, Office of Naval Research, Department of Energy, etc., provide additional employment opportunities for engineering physics graduates.

To qualify for a baccalaureate degree in engineering physics, the student must complete eight hours in chemistry, three hours in computer and information science, 18 hours in mathematics, 33 hours in physics (including the core physics courses), and 26 hours in engineering.

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Freshman

Fall	Credits	Spring	Credits
ENGL 1013	3	ENGL 1023	3
Composition I ¹		Composition II ¹	
PHSC 1001	1	PHSC 1011 Orientation	1
Orientation to		to Physical Science II	
Physical Science		MATH 2924 Calculus	4
MATH 2914 Calculus I	4	Ш	

V

Fall	Credits	Spring	Credits
COMS 1011	4	MCEG 2023	3
Programming I Lab		Engineering Materials	
and <u>COMS 101</u> 3 <u>Programming I</u>		PHYS 2114 Calculus- Based Physics I and	4
CHEM 2124 General	4	PHYS 2000 Physics	
Chemistry I and		Laboratory I	
CHEM 2120 General		Total Hauna	
<u>Chemistry I Lab</u>		Iotal Hours	15
Total Hours	16		

Sophomore

Credits	Spring
3	FAH 1XXX Fine Arts
2	and Humanities
0	Courses ¹
-2	FI EG 2102 Electric
	ELLO 2103 LIECTIC
3	<u>Circuits I</u>
87	MCEG 2033 Dynamics
4	<u>11000 2055 2 jildinico</u>
	PHYS 3213 Modern
	Physics
	MATTILOGIO
	<u>MATH 324</u> 3
4	Differential Equations
	I
-16	Total Hours
	Credits 3 3 -2 3 4 4

Junior

	Fall	Credits	Spring	Credits
•	FAH 1XXX Fine Arts and Humanities Courses ¹	3	 <u>USHG 1XXX U. S.</u> <u>History and</u> <u>GovernmentU. S.</u> 	3
,	PHYS 3023 Mechanics or PHYS 4013 Quantum Mechanics	3	History and Government ¹	2
	ELEG 2113 Electric Circuits II	3	PHYS 4113 Advanced Physics Laboratory	5
•	ELEG 2111 Electric Circuits Laboratory	1	· MCEG 3013 · MCEG 3313	3
•	COM5 2383	3		

×

Credits

3

3

3

3

3

15

v

https://www.atu.edu/catalog/current/undergraduate/colleges/science_technology_engineering_mathematics/phys_sci/physics-engineering.php

Bachelor of Science in Engineering Physics

Fall	Credits	Spring	Credits
PHYS 3133 Theory of Electricity and Magnetism or PHYS 4023 Computational Physics	3	 (PHYS 4213 Advanced Topics in Physics and Astronomy or an upper division Mathematics course) 	3
MCEG 3013 Mechanics of Materials	3-	or <u>PHYS 4003</u> <u>Thermodynamics and</u> <u>Statistical Mechanics</u>	
Total Hours	16	ELEG/MCEG/ COMS 3000 -4000 level Electives	-3-1
		MCEG 4202 Engineering Design/ELEG 4202 Engineering Design	-2-
		Total Hours	-14-

×

	Fall	<pre>K</pre> Credits		· PHVS 4061 Spring	Credits
•	MCEG 4403 Mechanics of Fluids and Hydraulics	3	•	PHYS 3003 Optics or PHYS 4113 Advanced Physics Laboratory	3
•	PHYS 3023 Mechanics or PHYS 4013 Quantum Mechanics	3	•	(PHYS 4213 Advanced Topics in Physics and Astronomy or an	3
	PHYS 3133 Theory of Electricity and Magnetism or PHYS 4023 Computational Physics	3		upper division Mathematics course) or <u>PHYS 4003</u> <u>Thermodynamics and</u> <u>Statistical Mechanics</u>	
	MCEG 3313 Thermodynamics I	3	٠	<u>MCEG 4443 Heat</u> <u>Transfer</u>	3
Don't Delet	COMS/ELEG/MCEG Elective (3000-4000	GIACE		PHYS 4951 Undergraduate Research in Physics	
	Total Hours	-4000 -15 14		COMS/ELEG/MCEG Elective (3000-4000 level)	3-2
				Total Hours	-13- 12

¹ See appropriate alternatives or substitutions in "<u>General Education Requirements</u>". A specific general education core course does not have to be taken in the semester listed, any other part of the general education core at any time is acceptable as well.

² Excluding MATH 3003 Foundations of Advanced Mathematics, MATH 3033 Methods of Teaching Elementary Mathematics,

FIE C/

Bachelor of Science in Engineering Physics

and MATH 4113 History of Mathematics.

³ PHYS 3023 Mechanics and PHYS 4003 Thermodynamics and Statistical Mechanics will satisfy the prerequisites for MCEG 3013

Mechanics of Materials and MCEG 4403 Mechanics of Fluids and Hydraulics for engineering physics majors.

⁴ Must complete both the PHYS class and one MATH upper division elective (PHYS course offered in alternating years).



REQUEST FOR PROGRAM CHANGE

Department Initiating Proposal	Date
Physical and Earth Sciences	
	11/29/2022

Title	Signature	Date
Department Head		11/30/2022
Dr. Hamed Shojaei		
Dean	0 4 4	
Dr. Judy L. Cezeaux	Juny & Cyric	12/1/2022
Assessment	NAI	1.1.1
Dr. Christine Austin	Un mit	12/5/22
Registrar	i lanama i lunarun	1/2/-
Ms. Tammy Weaver	Skowing weater	113123
Vice President for Academic Affairs		
Dr. Julie Furst-Bowe		

Committee	Approval Date
General Education Committee (Undergraduate Proposals Only)	
Teacher Education Committee (Graduate or Undergraduate Proposals)	
Curriculum Committee (Undergraduate Proposals Only)	
Faculty Senate (Undergraduate Proposals Only)	
Graduate Council (Graduate Proposals Only)	

Program Title: Physics

Outline change in program: (e.g., list changes in program such as (1) delete three hours of elective and (2) add three hours of approved major electives)

Delete:

- 1. STAT 2304
- 2. 3 hours of general electives
- 3. 3 hours of UD electives

MOVE:

1. Move Biological science to spring of sophomore

ADD:

- 1. COMS 2203 Programming 11 2. COMS 2303- 2323 Programming in Python
- 3. STAT 3153
- 4. I hour of general clectives

What impact will the change have on staffing, on other programs and space allocation?

None anticipated

Answer the following Assessment questions:

- a. How does the program change align with the university mission? Arkansas Tech is dedicated to student success and excellence. Some courses, required for the physics degree, offered by other departments have changed in a way that it is necessary for the required course to be changed. Additionally, we are specifying two new courses and removing six hours of electives. This change is to ensure that students have skills employers would expect of our graduates.
- b. If this change in the program is mandated by an accrediting or certifying agency, include the directive. If not, state not applicable. Not applicable
- c. What is the rationale for this program change? The current curriculum includes several general elective classes. Replacing some of the general elective courses with more appropriate COMS and STAT classes for physics majors will prepare students for the current challenges that graduates will face.
- b. How does this program fit in the current state of the discipline? Include Arkansas institutional comparisons. If Arkansas educational institutions do not have the course or program provide comparative examples from regional educational institutions. There are several physics programs in the state of Arkansas institutions. We are planning to be one of the first ones that obtain ANSAC accreditation. These new changes will help us with recruiting and keeping good students. The current curriculum doesn't address several new challenges our graduates will face. For example, data analysis and statistical methods are becoming more and more useful for physics graduates. We are adding a STAT course and a COMS course to address this.
- c. Attach a detailed assessment plan including three to five specific program student learning outcomes, means or instructional measures to assess each outcome, identify program courses where learning will be assessed, and performance standards or criteria for success which demonstrate student learning for each outcome. (Examples for assessment plans/curriculum mapping can be found at the Office of Assessment and Institutional Effectiveness web page.)

There will be no change to our assessment plan, since the courses added or deleted were not part of our assessment (They are all from other departments).

If this course will affect other departments, a Departmental Support Form for each affected department must be attached. The form is located on the Curriculum forms web page at http://www.atu.edu/registrar/curriculum forms.php.

Tammy Weaver

From:	Rebecca Cunningham
Sent:	Wednesday, January 4, 2023 5:19 PM
То:	Tammy Weaver
Subject:	Re: Curriculum Program Change for Physics and Engineering Physics

Yes, we can handle a small amount of additional students. I was afraid he was going to say like 20-30 a year and we can't handle another section anytime in the near future! But 4-5 we can do. 🙂

Mrs. Becky Cunningham, Assistant Professor Program Director for Computer Science & Information Technology Department of Engineering and Computing Sciences Arkansas Tech University Office: Corley 232 Phone: 479.880.4610 Virtual meeting room: <u>https://atu.webex.com/meet/rcunningham</u>

From: Tammy Weaver <tweaver@atu.edu>
Sent: Wednesday, January 4, 2023 5:02 PM
To: Rebecca Cunningham <rcunningham@atu.edu>
Subject: RE: Curriculum Program Change for Physics and Engineering Physics

Becky

I have just started reviewing these Physics proposals. Can you support the changes?

Thanks.

Tammy

Tammy Weaver, Registrar Arkansas Tech University Office of the Registrar Brown Building, Suite 307 105 West O Street Russellville, AR 72801-2222

Telephone: 479.968.0643 Fax: 479.968.0683 Email: <u>tweaver@atu.edu</u>

Please take a minute to complete this survey on the service you received. <u>http://www.atu.edu/registrar/survey.php</u>



Curriculum Matrix for Catalog					
(enter title for program changing)					
Freshman Fall Semester Freshman Spring Semester					
Add/Change:	Add/Change:				
Delete:	Delete:				
Total Hours: 16					
	Total Hours:16				
Sophomore Fall Semester	Sophomore Spring Semester				
Add/Change: COMS 2203	Add/Change: Biological sciences				
Delete: Move Biological science to spring of sophomore	Delete: 3 hr of Gen elective				
Total Hours:14	Total Hours: 16				
Junior Fall Semester	Junior Spring Semester				
Add/Change: COMS 2303- 2323	Add/Change: STAT 3153				
Delete: STAT 2304	Change Electives ³ I hour to Electives ³ 2 hours Delete: 3 hrs Gen upper division elective				
Total Hours: 16	Total Hours: 14				
Senior Fall Semester	Senior Spring Semester				
Add/Change:	Add/Change:				
Delete:	Delete:				
Total Hours:15	Total Hours:13				

In the attached matrix, include requested changes in the matrix and include course number and title.

2023 - 24 Physics Proposed 2022-2023 Degree map

Semester 1 - fall	Hrs.	Grade	Semester 1
ENGL 1013: Comp I (ACTS=ENGL 1013)	3	#	
PHSC 1001: Orientation to Physical Science	1		
MATH 2914: Calculus I (ACTS= MATH 2405)	4		
COMS 1013/1011	4		
CHEM2124/2120:Gen. Chem. I (ACTS=CHEM1414) MILESTONE	4		
Total hours	16	GPA	

Semester 2 - spring	Hrs.		Semester 2
ENGL 1023: Comp II (ACTS= ENGL 1023)	3	#	
PHSC1011: Orientation to Physical Science II	1		
MATH2924: Calculus II (ACTS= MATH2505)	4		
CHEM 2134/2130	4		
PHYS 2114/2000: General Physics I (ACTS=PHYS 2034)	4		
Total hours	16	GPA	

Semester 3 – fall	Hrs.		Semester 3
Social Sci/Fine Arts/Humanities/Comm Soc Sci	3		
MATH2934: Calculus III (ACTS= MATH 2603)	4		
PHYS 2124/2010: General Physics II (ACTS=PHYS 2044)	4		
COMS 2203 Programming II	3		
Total hours	14	GPA	

Semester 4 – spring	Hrs.		Semester 4
U.S. History & Government	3		
MATH3243: Differential Equations I	3		
PHYS 3213 Modern Physics	3		
ELEG2103: Electric Circuits I	3		
Biological Sciences with Lab	4		
Total hours	16	GPA	PHYS ADVISOR ASSIGNED

Semester 5 – fall	Hrs.	Grade	Semester 5
Social Sci/Fine Arts/Humanities	3		
PHYS 3023 Mechanics (even) or PHYS 4013 QM (odd)	3		
ELEG 2111 and ELEG 2113: Electric Circuits II and Lab	4		
PHYS 3133 EM (even) or PHYS 4023 Computational physics (odd)			
	3		
COMS 2303- Programing in Python 2323	3		
Total hours	16	GPA	

Semester 6 – spring	Hrs.		Semester 6
Social Sci/Fine Arts/Humanities	3		
PHYS 3003 Optics (even) or PHYS 4113 advanced lab (odd)	3		
PHYS 4213/MATH UD elective (even) or PHYS 4003 Statistical Mechanics and Thermodynamics (odd)	3		
STAT 3153: Applied statistics	3		
Gen Elective	2		
Total hours	14	GPA	APPLY FOR GRADUATION



Semester 7 – fall	Hrs.		Semester 7
Social Sci/Fine Arts/Humanities Soc Science	e 3		
PHYS 3023 Mechanics (even) or PHYS 4013 QM (odd)	3		
MATH 4003	3		
PHYS 3133 EM (even) or PHYS 4023 Computational physics (odd)	3		
Gen Elective 🏅	3		
Total hours	15	GPA	

Semester 8 – spring	Hrs.		Semester 8
Social Sci/Fine Arts/Humanities	3		
PHYS 4213/MATH UD elective (even) or PHYS 4003 Statistical Mechanics and Thermodynamics (odd)	3		Graduation Requirements:
PHYS 3003 Optics (even) or PHYS 4113 advanced lab (odd)	3		Min. hours 3000-4000 level courses: 40
PHYS 4951	1		No more than 4 PE activity hours
Gen UD Elective	3		Min. hours required:120
Total Hours	13	GPA	2.00+ GPA
			No more than 12 hours of "D" grades

Total hours = 120

DEGREE AUDIT CHECK LIST (BS-PHYS) - Physics 2022-23 2023-24

Date			Student	's Name	
Grade Point	Graduation Date		T #		
General E	ducation Requirements	Hrs		Major Requirements	Hrs
ENGL#	1013/1043 & 1023/1053	6	PHYS	2000 2010 2114 2124 3003 3023	
MATH #		0		3133 3213 4003 4013 4023 4113	
SCIENCE		0	PHYS	4951	
US HIST/GOVT		3		PHYS 4213 or 3 hrs UD MATH	36
SOC SCI	(6-9)	_		*exclude Math 3003, 3033, 4113	_
SOC SCI			-		
SOC SCI			BIOL		4
FINE ART/HUM	(6-9)		CHEM	2124 2120 2134 2130	8
FINE ART/HUM			COMS	1011 1013 2203 2323	104
FINE ART/HUM			ELEG	2103 2111 2113	7
СОММ	(0-3)	15	MATH	2914##** 2924 2934 3243 4003	18
TECH 1001 •		0	PHSC	1001 + 1011	2
TOTAL GEN E	DHOURS	24	STAT	2304- 3153	34
Electives					
			ELEC	BIOL, CHEM, COMS, ELEG, GEOL, MCEG, PHSC, PHYS	y.
					94
		2		TOTAL MAJOR HOURS	-92
TOTAL ELECT	TIVE HOURS	4		TOTAL HOURS	
Final Check:	Min. hours require	d 120		Earned Hrs	

k:	Min. hours required	120	Earned Hrs
	40 hours upper level	thru	minus P/C HRS
	# of "D" hours	thru	to be completed
	Max activity hours 4		TOTAL

** Satisfying Gen Ed Satisfying Institutional Requirement # C or better must be earned for Gen Ed DOWNLOAD PDF 📓

General Information

Navigate this section:

Introduction

Academic Calendar

Administration & Faculty

Programs of Study

Admission

ACTS Course Transfer System

Fees & Expenses

Student Affairs Operations

Financial Aid

Scholarships

Regulations & Procedures

Graduation Requirements

General Education Requirements

University Honors

College Distinction

Military Science

Catalog PDF

Bachelor of Science in Physics

DEPARTMENT HOMEPAGE The physics curriculum is designed to serve the needs of students in the fields of engineering, medicine, and other sciences. The junior and senior courses are tailored for students who desire a concentration in physics for a bachelor of science degree in physical science and/or wish to pursue graduate study in areas such as physics, meteorology, and astronomy.

To qualify for a bachelor of science degree in physical science, the student must take eight hours in chemistry, three hours in computer and information science, 25 hours in mathematics, and a minimum of 30 hours in physics. Twentytwo semester hours in these courses must be at the 3000 or 4000 level. A minimum of 38 hours must be taken in the Department of Physical Sciences

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Freshman

Fall	Credits	Spring	Credits
ENGL 1013	3	• ENGL 1023	3
Composition I ¹		Composition II ¹	
COMS 1011	4	MATH 2924 Calculus	<u>s</u> 4
Programming I Lab		Ш	
and <u>COMS 1013</u>		DUVC and Calmal	
<u>Programming I</u>		PRIS 2114 Calculus- Record Division Land	4
MATH 2014 Calculus I	4	PHVS 2000 Physics	
THIRD DUTY OUTCUTUD I	-	Laboratory I	
PHSC 1001	1	<u>Laboratory</u> 1	
Orientation to		• PHSC 1011 Orientatio	on 1
Physical Science		to Physical Science I	I
CHEM 2124 General	4	CHEM 2134 General	4
Chemistry I and		Chemistry II and	
CHEM 2120 General		CHEM 2130 General	
Chemistry I Lab		Chemistry II Lab	

Bachelor of Science in Physics

Fall	Credits	Spring	Credits
Total Hours	16	Total Hours	16

Sophomore

COMS2203 Fall	3 Credits
SS 1XXX Social	3
Science Courses 1	
PHYS 2124 Calculus-	4
<u>Based Physics II</u> and	
PHYS 2010 Physics	
Laboratory II	
MATH 2934 Calculus	4
III	
BIOL XXXX Biological	4
Science with	
Laboratory	
Total Hours	15-
	14

BIDL W/LA	6 4
Spring	Credits
USHG 1XXX U.S.	3
History and	
GovernmentU.S.	
History and	
Government 1	
ELEG 2103 Electric	3
<u>Circuits I</u>	
PHYS 3213 Modern	3
Physics	
MATH 3243	3
Differential Equations	
I	
Elective ³	3
Total Hours	-15-
	16

v

Junior

Fall	Credits	Spring	Credits
FAH 1XXX Fine Arts and Humanities Courses ¹	3	FAH 1XXX Fine Arts and Humanities Courses ¹	3
<u>PHYS 3023 Mechanics</u> or <u>PHYS 4013</u> Quantum Mechanics	3	PHYS 3003 Optics or PHYS 4113 Advanced Physics Laboratory	3
<u>ELEG 2113 Electric</u> <u>Circuits II</u>	3	(PHYS 4213 Advanced Topics in	3
ELEG 2111 Electric Circuits Laboratory	1	<u>Physics and</u> <u>Astronomy</u> or an upper division	
PHYS 3133 Theory of Electricity and Magnetism or PHYS 4023 Computational Physics	3	Mathematics course) or <u>PHYS</u> <u>4003</u> <u>Thermodynamics</u> <u>and Statistical</u>	
		Mechanics STAT 3153 Elective (3000-4000 level) ³	3

Bachelor of Science in Physics

Fall	Credits	Spring	Credits
STAT 2304	2	Electives ³	-1 3
Programming		Total Hours	_13_
Science			14
Total Hours	-17-		
	16		

2

•

Senior

P-11	0	
rall	Credits	Spring
SS 1XXX Social	3	SFHS 1XXX Social Sciences/Fine
Science Courses 1		Arts/Humanities/Communication
PHYS 3023 Mechanics	3	Courses 1
or <u>PHYS 4013</u>		PHYS 3003 Optics or PHYS 4113
<u>Quantum Mechanics</u>		Advanced Physics Laboratory
PHYS 3133 Theory of	3	(PHYS 4213 Advanced Topics in
Electricity and		Physics and Astronomy or an
<u>Magnetism</u> or <u>PHYS</u>		upper division Mathematics
023 Computational		course) or <u>PHYS 4003</u>
Physics		Thermodynamics and Statistical
MATH 4003 Linear	3	Mechanics
Algebra I		PHYS 4951 Undergraduate
Elective (3000-4000	3	Research in Physics
evel) ³	5	Electives (3000-4000 level) ³
Fotal Hours	15	Total Hours 13

¹ See appropriate alternatives or substitutions in "General Education Requirements". A specific general education core course does not have to be taken in the semester listed, any other part of the general education core at any time is acceptable as well. ² Excluding <u>MATH 3003</u> Foundations of Advanced Mathematics. <u>MATH 3033</u> Methods of Teaching Elementary Mathematics.

4

and MATH 4113 History of Mathematics

4

³ Seven hours of electives must be from physical sciences, biology, engineering, computer science.

⁴ Must complete both the <u>PHYS 4113 Advanced Physics Laboratory</u> and 3 hours PHYS electives (PHYS course offered in alternating years).