CTS - 1314 - Network Defense and Countermeasures I

XXX 3.0 New Course Proposal

Section I: Submission Information

Submission and Meeting Dates*	**09/6/2021 for meeting ~~10/1/2021~~ 11/5/2021**
Faculty Proposer(s)*	**Dr. Melinda Lyles and Dr. Mary Myers**
Faculty Presenter*	**Dr. Melinda Lyles and Dr. Mary Myers**
Hierarchy Owner (Department)*	**Activity Log** **Melinda Lyles** **+ 2. Department of Computer Science** 2. Computer Science
List of department/program faculty who support this proposal*	**Dr. Mary Myers** **Dr. Roger Webster** **Prof David Piro**
Does this course already exist in SCNS (already being offered at other state colleges and universities)?*	**Activity Log** **Melinda Lyles** **+ Yes** Yes
Is this an "experimental course" that you intend to offer 3 or fewer times?*	**Activity Log** **Melinda Lyles** **+ No** No

Course Prefix* CTS

Activity Log
Melinda Lyles
+ CTS

Course Number* 1314

New Course Prefix

Course Title* Network Defense and Countermeasures ~~I~~ I

Course Description* Explore the methods needed to provide protection of digital business assets along with detection and response to ~~Cyber~~ ~~Threats~~ cyber threats. Leverage ~~Threat~~ ~~Intelligence~~ threat intelligence to predict threats before they happen. The focus is on network security designed to enable students to create and deploy a comprehensive network defense system.

Justification for new course* This course is being added as a requirement for the new AS Cybersecurity Operations Degree. The state frameworks require a course exploring the methods to provide protection of digital assets.

Is this course replacing an existing FSW course?* No

Activity Log
Melinda Lyles
+ No

Was a change of course prefix/number requested by SCNS?* No

Activity Log
Melinda Lyles
+ No

☐ Yes ☑ No ☐ N/A

Indicate the course prefix and number of the course to be replaced.* N/A

Will the new course be equivalent to the course it is replacing?* N/A

Activity Log
Melinda Lyles
+ N/A

☐ Yes ☐ No ☑ N/A

Are you submitting a Course Discontinuation proposal for the course that is being replaced?* N/A

Activity Log
Melinda Lyles
+ N/A

☐ Yes ☐ No, not at this time ☑ N/A

Section II: Effective Dates

Published Effective Date for approved action*

Activity Log

Melinda Lyles

+ Fall 2022

Fall 2022

Requested Effective Date for Exception*

Activity Log

Melinda Lyles

+ N/A

N/A

Reason for requesting exception to effective date*

N/A

SECTION III: Proposed Course Requirements

Are you proposing any of the designations under K, L, or M be assigned to this course?*

Activity Log

Melinda Lyles

+ No

No

A. Course Prerequisites*

~~None~~ ~~CTS1120-Network~~ ~~Security~~ ~~Fundamentals~~ ~~none~~ CTS 2120 ~~with~~ ~~(with~~ with a grade of "C" or ~~better~~ ~~better)~~ better

B. Course Corequisites*

None

B. Is this course listed as a corequisite on a paired course?*

Activity Log

Melinda Lyles

+ No

☐ Yes ☑ No

B. If Yes, please enter the prefix, number, and title of the paired course.

None

C. Topic Outline*

- Network ~~Attacks~~ attacks and ~~Defense~~ ~~Strategies~~ defense strategies
- Administrative ~~Network~~ ~~Security~~ and technical network security
- ~~Technical~~ ~~Network~~ ~~Security~~ Administrative application security
- ~~Network~~ ~~Perimeter~~ Data security
- Endpoint ~~Security~~ security for Windows ~~Systems~~ ~~Endpoint~~ ~~Security-Linux~~ ~~Endpoint~~ ~~Security-Mobile~~ ~~Devices~~ ~~Endpoint~~ ~~Security-IoT~~ ~~Devices~~ ~~Administrative~~ ~~Application~~ ~~Security~~ ~~Data~~ ~~Security~~, Linux, mobile and ~~IoT~~ ~~(Internet~~ Internet of ~~Things)~~ Things (IoT) devices

D. Minimum grade required to pass the course* C

E. Course Credits or Clock Hours* 3 Credits

F. Contact Hours (Faculty Load)* 3 Credits

F. Do the contact hours differ from the course/lecture/lab credits?*

Activity Log

Melinda Lyles

+ No

- [ ] Yes
- [x] No

F. If Yes, please explain. N/A

G. Grade Mode*

Activity Log

Melinda Lyles

+ Standard Grading (A-F)

Standard Grading (A-F)

H. Credit Type*

Activity Log

Melinda Lyles

+ College Credit

College Credit

I. Should any Program Restrictions be listed on this course?*

Activity Log

Melinda Lyles

+ No

- [ ] Yes
- [x] No

I. List all program restrictions

J. Is this course repeatable for credit?*

Activity Log

Melinda Lyles

+ No, course is not repeatable for credit

- [ ] Yes, course is repeatable for credit
- [x] No, course is not repeatable for credit

J. If course is repeatable, list the maximum number of credits the student may earn (including the first passing attempt).

K. Will this course be designated General Education (GE)?*

Activity Log

Melinda Lyles

+ No

- [ ] Yes
- [x] No

L. Will this course be designated Writing Intensive (WI)?*

Activity Log

Melinda Lyles

+ No

- [ ] Yes
- [x] No

M. Will this course be designated International or Diversity (I) focus?*

Activity Log

Melinda Lyles

+ No

- [ ] Yes
- [x] No

If you checked Yes to any question K, L, M, please provide justifications for including the designation(s) on this new course.

N/A

Section IV: Syllabus Course Competencies and Learning Outcomes

Integral GE Course Competencies and supporting Course Learning Outcomes*	**General Education Competency: ~~Research and Evaluate~~ Think** **Course ~~Outcomes~~ outcomes or ~~Objectives Supporting~~ objectives supporting the General Education Competency ~~Selected~~:** • **~~Analyze Compare and contrast attacker~~ Implement common defense tools~~,~~ ~~tactics, and harden computing systems prevalent in the current IT infrastructure procedures~~ to ~~identify indicators of compromise (IOCs) that can be utilized during active and future investigations~~ prevent network attacks.** • **~~Compare~~ Assess modern attack methods, infiltration preference, and ~~contrast endpoint~~ security ~~solutions for different types of platforms~~ exploitations.** • **~~Compare~~ Analyze and ~~contrast different methods to provide protection Identify~~ identify network topologies used for ~~data security~~ modern information systems.**
Supplemental GE Competencies and supporting Course Learning Outcomes*	**N/A**
Is this course identified by the State in FAC Rule 6A 14.0303 as a General Education Core course?*	**Activity Log** **Melinda Lyles** **+ No** No
If YES, in which of the five General Education areas is this a Core course? (Drop down: Communication, Humanities, Social Sciences, Natural Sciences, Mathematics)	**N/A**

Additional Course Learning Outcomes*

- ~~Prevent~~ Utilize network ~~attacks with~~ security defense tools for both software and hardware countermeasures.
- Explore recent and ~~defense strategies~~ historic events of major cyber-attacks.
- Use the cyber kill chain to ~~include administrative, technical,~~ trace the stages of a cyber-attack.
- Discover leading database design architectures and ~~network perimeter~~ security protocols.
- Discuss endpoint security solutions for different types of platforms.
- ~~Articulate the basic understanding~~ Compare and ~~in-depth knowledge of~~ contrast different methods to provide protection for data security.
- Implement endpoint security ~~threats~~ for Windows, ~~attacks~~ Linux, ~~vulnerabilities, attacker's behaviors, cyber kill chain, etc~~ mobile and ~~Internet of Things (IoT)~~ IoT devices.
- ~~Compare and contrast attacker tools, tactics, and procedures to identify indicators of compromise (IOCs) that can be utilized during active~~ Analyze ~~and future investigations. Compare and contrast endpoint security solutions for different types of platforms of assets harden~~ emerging computing systems prevalent in the ~~current IT~~ information technology infrastructure.
- ~~Evaluate~~ Perform security assessments for mobile devices, IoT, and program or web application ~~security Compare and contrast different methods to providing protection for data~~ security.
- ~~Demonstrate the ability to monitor~~ Monitor and analyze logs and alerts from a variety of different technologies across multiple platforms (IDS/IPS, end-point protection, servers, and workstations).

Section V: Impacts

Will this new course be included in any programs or certificates?*

Activity Log

Melinda Lyles

+ Yes

☑ Yes ☐ No

List programs/certificates that will include this new course.*

AS Cybersecurity Operations Degree

Have you discussed the impact(s) with leaders of affected programs/departments*

Activity Log

Melinda Lyles

+ Yes

☑ Yes ☐ No ☐ N/A

Section VI: State Information

Copy and Paste the SCNS Course Profile Description below (http://scns.fldoe.org/

IN THIS COURSE, STUDENTS TAKE AN IN DEPTH LOOK AT NETWORK DEFENSE CONCEPTS AND TECHNIQUES. STUDENTS EXAMINE THEORETICAL CONCEPTS THAT MAKE THE WORLD OF NETWORKING UNIQUE. THIS COURSE ALSO ADOPTS A PRACTICAL HANDS-ON APPROACH WHEN EXAMINING NETWORK DEFENSE TECHNIQUES. ALONG WITH EXAMINING DIFFERENT NETWORK DEFENSE STRATEGIES, THIS COURSE WILL EXPLORE THE ADVANCEMENT OF NETWORK IMPLEMENTATION, AS WELL AS, TIMELESS PROBLEM-SOLVING STRATEGIES. THE COURSE ALSO COVERS SUCH ESSENTIAL PRACTICES AS DEVELOPING A SECURITY POLICY AND THEN IMPLEMENTING THAT POLICY BY PERFORMING NETWORK ADDRESS TRANSLATION, PACKET FILTERING, AND INSTALLING PROXY SERVERS, FIREWALLS, AND VIRTUAL PRIVATE NETWORKS.

ICS code for this course*

Activity Log

Melinda Lyles

+ **Advanced and Professional - 1.16.07 - Computer & Info Science**

Advanced and Professional - 1.16.07 - Computer & Info Science

Institutional Reporting Code*

Activity Log

Melinda Lyles

+ **11607 Computer And Infor Science**

11607 Computer And Infor Science

Course Attributes*

Activity Log

Sheila Seelau

+ **AA - AA Course**

− ~~**AS AS Course**~~

Melinda Lyles

+ **AS AS Course**

AA - AA Course

Section VII: Attachments

List any related proposals that are being submitted for the same meeting that include this new course, or are directly linked to this proposal*

~~N/A~~ ~~CTS1120-Network~~ ~~Security~~ ~~Fundamentals~~ ~~is a prerequisite~~ New Program Proposal for ~~this course. It is being~~ ~~presented~~ ~~to curriculum~~ ~~as a new~~ ~~course~~ ~~this meeting.~~ AS Cybersecurity Operations degree

New Course Proposal for CTS 2317 Network Defense and Countermeasures II

Steps for CTS - 1314 - Network Defense and Countermeasures I

Originator

Status: *Approved*

Participants

Melinda Lyles 9/6/2021 9:19 PM

Department Chair/Program Coordinator/Director

Status: *Approved*

Participants

Mary Myers 9/7/2021 1:44 PM

Academic Dean

Status: *Approved*

Participants

▲ **Academic Dean Committee - School of Business and Technology**

Thomas Norman * 9/16/2021 10:28 AM

Curriculum Coordinator and Advising

Status: *Approved*

Participants

▲ **Office of the Registrar and Advising Committee**

Jeffrey Peterman * 9/21/2021 2:42 PM

Office of Accountability (AASPIRE)

Status: *Approved*

Participants

▲ **Office of Accountability (AASPIRE) Committee**

D'ariel Barnard * 9/21/2021 3:59 PM

Curriculum Committee

Status: *Approved*

Participants

▲ **Curriculum Committee**

Curriculum Committee Nov. 5, 2021 meeting agenda

Sheila Seelau * 11/11/2021 10:49 AM

Provost (Final Signature)

Status: *Approved*

Participants

▲ **Provost Committee**

Eileen DeLuca * 11/15/2021 9:43 AM

Office of Accountability (AASPIRE)

Status: *Working*

Participants

▲ **Office of Accountability (AASPIRE) Committee**

D'ariel Barnard *

Office of the registrar-Curriculum Coordinator

Status: *Incomplete*

Participants

Jeffrey Peterman

Attachments for CTS - 1314 - Network Defense and Countermeasures I

Integration Manager.pdf (uploaded by Melinda Lyles, 9/6/2021 9:18 pm) **SCNS Email 9-16-2021 mutiple courses approved.pdf** (uploaded by Sheila Seelau, 10/4/2021 7:19 pm) **CTS 1314 Curriculum Committee Review Notes.docx** (uploaded by Sheila Seelau, 10/6/2021 4:44 pm) **CTS 1314 Network Defense and Countermeasures I - Syllabus 10-17-2021.docx** (uploaded by Sheila Seelau, 10/17/2021 1:05 pm) **CTS 1314 - Curriculum Committee Reviews_10-25-2021.docx** (uploaded by Kelsea Cid, 10/25/2021 6:00 pm) **CTS 1314 Network Defense and Countermeasures I syllabus 10-27-2021.docx** (uploaded by Sheila Seelau, 11/1/2021 6:25 pm) **CTS 1314 Reviews - final edits complete 11-1-2021.docx** (uploaded by Sheila Seelau, 11/1/2021 6:25 pm) **CTS 1314 Network Defense and Countermeasures I - syllabus for Fall 2022.docx** (uploaded by Sheila Seelau, 11/11/2021 10:45 am)

Comments for CTS - 1314 - Network Defense and Countermeasures I

Sheila Seelau — 11/11/2021 10:49 am Reply

CTS 1314 Network Defense and Countermeasures I New Course proposal was accepted by unanimous vote of CC membership, 11/5/2021. This course will be added to the 2022-2023 catalog and may be offered beginning in Fall 2022.

Syllabus labeled "for Fall 2022" is finalized and ready to lock but should be held by the department chair or administrative assistant until the Document Manager files open for AY 2022-2023.

Kelsea Cid — 10/25/2021 6:00 pm 2 Replies | Reply

The Curriculum Committee has completed their pre-meeting review of this course. Please see the Word document added on 10/25/2021 to review and/or answer reviewer comments/edits.

> **Sheila Seelau** — 11/1/2021 6:11 pm
>
> I removed the parentheses from the prerequisite minimum grade to match current standard catalog language.

> **Sheila Seelau** — 11/1/2021 6:33 pm
>
> All reviewer comments on syllabus addressed by Melinda Lyles 10/27/21. Corresponding changes to proposal made by S Seelau 11/1/2021.
>
> "Review comments - finalized 11/1/2021" document uploaded.
>
> Finalized syllabus (labeled 10/27/21) uploaded 11/1/2021. Please refer to this syllabus for the 11/5/2021 Curriculum Committee meeting.
> [Most older versions of the syllabus have now been removed from Curriculog.]

David Evans — 10/21/2021 4:00 pm Reply

With the listed corrections,the proposal meets the requirements. No impact per the Impact Report.

Sheila Seelau 10/17/2021 1:12 pm 1 Reply | Reply

Mary Myers provided an updated syllabus containing revisions to all course learning objectives on 10/14/2021. This syllabus and all related changes were copied to the Curriculog proposal by SSeelau on 10/17/2021, replacing language in pertinent proposal fields.

SS also added New Course Proposal for CTS 2317 to the list of related proposals at the end of the form, as these two new courses are sequenced.

The syllabus file labeled "10-17-2021" replaces all previous versions and must be reviewed along with the revised proposal for the 11/5/2021 Curriculum Committee (CC) meeting. The proposal is being sent to CC&A and CC for review.

Sheila Seelau 11/11/2021 10:46 am

done

Sheila Seelau 10/8/2021 12:56 pm Reply

After consultation with Mary Myers, Prerequisite was changed from "None" to "CTS 2120 with a grade of "C" or better."

This change has been made both on proposal and syllabus. Please see syllabus labeled "10-8-21."

Sheila Seelau 10/6/2021 4:57 pm Reply

Curriculum Committee Review Comments document uploaded 10/6/2021.
All issues have been resolved by Melinda Lyles with assistance from CC Chair Sheila Seelau and the support of CompSci Dept Chair Mary Myers.
Reviewers should double-check to make sure their questions have been answered and comments addressed.

Sheila Seelau 10/6/2021 4:54 pm Reply

In response to reviewer questions about selected General Education competencies and supporting CLOs, originator Melinda Lyles changed the GE Integral Competency to Think. Critical thinking will be demonstrated by 3 supporting CLOs that begin with the phrase, "Compare and contrast."
Competencies were tightened, and formatting fixed. All changes copied to Syllabus 10/5/2021.

Sheila Seelau — 10/6/2021 4:46 pm 1 Reply | Reply

Question to the Computer Science Department: Are you sure you want to make the minimum grade a C? By doing so, you will be excluding "non-computer science students" from meeting A.A. elective graduation requirements. Since this course is labeled AA, and will be part of a non-restricted program, you may want to consider allowing minimum grade of D (standard grading).

> **Sheila Seelau** — 10/6/2021 4:51 pm
>
> **SS: Discussed with originator Melinda Lyles and Computer Science Department Chair Mary Myers 10/5/2021.**
>
> **Minimum grade of C will be a Program requirement in new Cybersecurity Operations AS degree, so should be listed on all new courses submitted (Fall 2021) for this degree.**
>
> **In addition, all prerequisites should include "with a grade of "C" or better" language for progression purposes.**
>
> **Existing courses COP 1000, CTS 1131, and CTS 1133 have standard grading (minimum grade of D), which will not be changed on the courses themselves. Instead, on sequenced courses for which any of these 3 act as a prerequisite, the requirement "with a grade of "C" or better" will be added to the prerequisite field.**

Sheila Seelau — 10/5/2021 12:21 pm 1 Reply | Reply

Review comments were discussed and edits made by MLyles and SSeelau 10/5/2021.

> **Sheila Seelau** — 10/6/2021 11:07 am
>
> **10/5/21 edits made by/with ML based on review comments:**
> **- meeting date changed to Nov 5**
> **- prerequisite deleted**
> **- topic outline edited**
> **- minimum grade = C verified**
> **- Integral GE Competency changed to Think; supporting and additional CLOs modified**
> **- formatting corrected (italics, punctuation)**
> **- all relevant changes copied to syllabus**

Jeffrey Peterman — 9/21/2021 2:39 pm 1 Reply | Reply

Course Attributes need to be changed to AA AA Course as these can be taken by any one.

> **Sheila Seelau** — 9/23/2021 5:18 pm
>
> **Changed by SSeelau 9/23/2021.**

Thomas Norman — 9/16/2021 10:28 am Reply

I have reviewed and approve this proposal.

Mary Myers — 9/7/2021 1:44 pm Reply

Approved with minor adjustments - added the prerequisite information.

Signatures for CTS - 1314 - Network Defense and Countermeasures I

Provost (Final Signature)	Status: *Approved*
Eileen DeLuca	**11/15/2021**

Crosslistings for CTS - 1314 - Network Defense and Countermeasures I

CTS - 1314 - Network Defense and Countermeasures I (parent proposal)

This proposal does not have any active crosslisted proposals.

Decision Summary for CTS - 1314 - Network Defense and Countermeasures I

Office of Accountability (AASPIRE)

Status: *Working*

Step Summary

This step requires 100% approval from all participants to move forward.

Participants	Totals
▲ **Office of Accountability (AASPIRE) Committee**	**Users Approved:** ***0***
D'ariel Barnard *	**Users Rejected:** ***0***