Lane Community College

Part 1: Course Details

Division/Department requesting change: **BCIT**

Course developer name and contact information: **Don Easton (eastond@lanecc.edu/541.463.5532)**

Division Dean: **Chris Rehn**

Academic year (e.g., 2018-19) change will take effect: **2018-2019**

TYPE OF COURSE

- ☒ Lower Division Collegiate
- ☐ Professional/Technical
- ☐ Developmental, numbered below 100

CHANGES TO COURSE

Enter Current Course Information **(fill out this column completely)**	**Proposed Change type** (check all that apply)	**Proposed Course Changes**
Course number: CS285	☐ Course number	
Course title: OS Hardening	☑ Course title	Cybersecurity Operations
Credits _2__ Lecture _1__ Lecture/Lab _1__ Lab _4__ Total Credits	☐ Credit change	___ Lecture ___ Lecture/Lab ___ Lab ___ Total Credits
Contact hours per week __2_ Lecture __2_ Lecture/Lab __3_ Lab __7_ Total Contact Hours/Week	☐ Contact hours **per week** (see formula below) 1 lecture = 1 contact hour per week 1 lecture/lab = 2 contact hours per week 1 lab = 3 contact hours per week	___ Lecture ___ Lecture/Lab ___ Lab ___ Total Contact Hours/Week
Prerequisites (current) **CS240W, CS284,**	☑ Prerequisites	Prerequisites (proposed): **CS284, CS189 (new proposed course)**
Placement test and code (e.g., 4cpa score of 75-120; contact testing for codes)	☐ Prerequisite placement test/score	
Co-requisites: CS240U	☑ Co-requisites	**None**
Grade option (letter or P/NP):	☐ Grade option (letter or P/NP)	Grade option (proposed):
Copy/paste current course description. If	☐ Course description (300	Enter revised description (aim for

this course is repeatable for credit, please include a sentence in your description. E.g., "This course is repeatable for up to ___ credits." This course gives the students a real world understanding of the vulnerabilities that exist in today's operating systems and gives practical, hands-on experience resolving and/or mitigating the vulnerabilities. We will use real systems (like Windows Server and Linux), the latest security resolution guidance, industry accepted tools to apply the resolutions, and industry accepted tools to measure the effectiveness of the resolutions. When the student finishes this course, they will have a solid understanding of actual threats to computer systems and the resolutions to mitigate those threats and vulnerabilities. This course has a hands-on focus.	characters). For examples, see Sample Course Descriptions.	300-400 characters/approximately 60-70 words): This course is designed to teach students basic incident response and incident handling, including identifying sources of attacks and security breaches, analyzing security logs and network traffic, performing postmortem analysis, and implementing and modifying security measures. It will provide them with the fundamental knowledge and core skills needed to begin working in a Security Operations Center (SOC) as a junior analyst.
Copy/paste current learning outcomes: Upon successful completion of this course, the student should be able to: 1. Create baselines of various Windows and Linux services 2. Generate vulnerability reports 3. Discuss domain controller, file, database, and print server vulnerabilities and resolutions 4. Discuss DNS and DHCP server vulnerabilities and resolutions 5. Discuss mail, FTP, and Web server vulnerabilities and resolutions 6. Compare baseline and post resolution vulnerability reports 7. Apply appropriate resolutions to the baseline 8. Install and utilize various industry accepted tools	☑ Course learning outcomes, Core Learning Outcomes, and assessments	Enter new outcomes, assessments in chart below Upon successful completion of this course, the student should be able to: 1. Learn basic incident analysis and methods, using industry standard tools. 2. Explain basic event correlation, normalization, and metrics of event data. 3. Describe common attack vectors against networks and hosts. 4. Understand SOC workflow management system and automation. 5. Interpret log data to identify malicious activity on Windows and Linux hosts. 6. Develop knowledge in security monitoring,

		including identifying sources and types of data and events.
	☐ Other (please explain)	

Part 2: Rationale, Equity, Library Resources, Course Overlap

RATIONALE: Describe the rationale for this course revision

This course was developed when it was common for computer operating systems to come with multiple insecure services enabled by default in order to provide usability. As the systems have developed and security has become a bigger issue, the operating system vendors have been forced to provide more secure systems. Because this course was designed to combat that insecurity and the issue now is not as great, we decided this course number would be much better addressing more important security issues. We decided to rename the course as Cybersecurity operations and update the outcomes to better address the relation to modern security problems and how they are being addressed in industry.

CURRICULUM EQUITY STATEMENT Please do not copy/paste the COPPS equity statement. Reflect how your course supports equity. **To promote an environment where all learners are encouraged to develop their full potential, this course will support Lane's Curriculum Equity policy in the following way(s):**

This course supports the college's efforts to introduce and support equity in all curriculum. Access to the course will be designed in such a way to be inclusive of all, recognizing that all students have something to contribute. Materials will be made available in alternate formats (where feasible) to ensure that students have equal access. Materials will be produced in such a way to encourage women, minorities, and people with disabilities to consider occupations within technology.

LIBRARY CONSULTATION Please contact your liaison librarian to schedule a 30+ minute individualized instructional consultation and collaboration session. In addition to your specific course-related questions, your librarian will be prepared to share:

- Library resources and services that support your teaching and student learning needs
- OER (Open Educational Resources) options that align with your program and course curriculum
- Strategies for integrating the development of information literacy skills into course content and/or assignments

Please allow one week for the librarian to prepare for your consultation. If you are not sure who your liaison librarian is, you can either look it up on the Library's website or call the Library Reference Desk at 463-5355. (Librarian signature required above.)

COURSE OVERLAP Indicate any topic/content overlap with other courses. How will this course's topics and content be differentiated? If there is overlap, faculty of overlapping courses must **agree on the extent of overlap and include a rationale** explaining its necessity. The dean of the division in which overlap occurs must sign their approval (see p.1).

Division	Course Number / Title	Rationale	Dean of overlap course (name)

CAREER/TECHNICAL COURSE TRACKING (required only for career/technical courses)

Career/Technical courses are tracked within programs for purposes of Carl Perkins funding and budgetary planning. Indicate all degree or certificate programs for which this course will be required.

Programs in which course will be required	Division
CPC Computer Network Security	BCIT

Part 3: Outcomes, Assessments, and Topics

LIST COURSE OUTCOMES, CORE LEARNING OUTCOMES (CLOS), AND ASSESSMENTS The information in this section should be used to create your course outline and syllabus. How are Lane's Core Learning Outcomes emphasized and measured or demonstrated through course assessments? Please indicate which Core Learning Outcomes and Dimensions are linked to your course outcomes. Need help? Contact Tammy Salman, Faculty Coordinator, Assessment and Curriculum Development or Sarah Lushia, Core Learning Outcomes Coordinator.

Core Learning Outcomes and Dimensions **You do not need a CLO for each course outcome.** **EXAMPLE** CLO 1.2: Determine information need, find and cite relevant information	**COURSE-LEVEL LEARNING OUTCOMES** (course outcomes) See this page for guidance on writing outcomes **EXAMPLE** Upon successful completion of this course, students will be able to: 1. Describe and explain general plant structure and function in relation to plant growth and development. 2. Demonstrate knowledge of horticultural principles in the cultivation of plants.	**ASSESSMENTS** Include specific assignments you will use to measure/observe student attainment of outcomes. For assessment ideas see Authentic Tasks
CLO 5: Apply learning 5.2 Apply skills, abilities, theories or methodologies gained in one situation to new situations to solve problems or explore issues	Learn basic incident analysis and methods, using industry standard tools.	Discussion/Questions Hands-on Lab Assignments Quizzes
CLO 1: Think critically 1.2 Determine information need, find and cite relevant information	Explain basic event correlation, normalization, and metrics of event data.	Discussion/Questions Hands-on Lab Assignments Quizzes
CLO 1: Think critically 1.2 Determine information need, find and cite relevant information	Describe common attack vectors against networks and hosts.	Discussion/Questions Hands-on Lab Assignments Quizzes
CLO 1: Think critically 1.2 Determine information	Understand SOC workflow management system and automation.	Discussion/Questions Hands-on Lab Assignments

need, find and cite relevant information		
CLO 3: Create ideas and solutions 1.2 Experiment with possibilities that move beyond traditional ideas or solutions. Embrace ambiguity and risk mistakes	Interpret log data to identify malicious activity on Windows and Linux hosts.	Discussion/Questions Hands-on Lab Assignments Quizzes
CLO 5: Apply learning 5.2 Apply skills, abilities, theories or methodologies gained in one situation to new situations to solve problems or explore issues	Using security monitoring techniques, apply the processes of identifying sources and types of data and events.	Discussion/Questions Hands-on Lab Assignments Quizzes

COMPETENCIES AND TOPICS COVERED (include in course outline)

Example: Course Outline Sample (from COPPS)

- Cybersecurity and the Security Operations Center
- Principles of Network Security
- Protecting the Network against Advanced Attacks
- Cryptography and the Public Key Infrastructure
- Endpoint Security and Analysis
- Security Monitoring
- Intrusion Data Analysis
- Incident Response and Handling

Part 4: Financial and Student Impact

Financial Impact Analysis

Describe the financial impact of the revised course, including: Instructional costs; workload (both FT and PT faculty and classified staff); physical space requirements (e.g., labs); additional equipment needs; additional fees; any cost reductions

This course will not require any additional staffing, as the current faculty and staff will support this course. Our program staff are actively moving towards utilizing OER/free materials for all courses. This new course will not require any additional expenses such as textbooks or additional fees. In fact, there will be a cost reduction as no textbook is required.

Student Impact Analysis

Describe the revised course's potential impact on students, including: Effect of changes on program requirements, articulations, cost, credit load, avoiding excess credits in transfer, financial aid credit limits, completion, and enrollments; determination of how new/revised courses transfer to four-year schools (please consult with your advisor).

The revised course will not change degree/CPC requirements. In fact, the change in the objectives of the course will improve on the overall outcome of the program and increase the breadth and depth of knowledge and skill the student will gain. This makes them more marketable in the technology industry.

Part 5: Degree Requirements Applications (if applicable)

If applying for any of the following, check the appropriate boxes and include your completed degree requirements forms with this course proposal. Go to the Curriculum Office website to download these forms.

- ☐ AAOT (Career Technical courses not eligible)
  - ☐ Arts & Letters
  - ☐ Cultural Literacy
  - ☐ Information Literacy
  - ☐ Mathematics
  - ☐ Science /Computer Science
  - ☐ Social Sciences
  - ☐ Speech/Oral Communication
- ☐ Health/Wellness/Fitness (all degrees)
- ☐ Human Relations designation (for AAS degrees and certificates)
- ☐ Sustainability course status (optional)

College Approval (before signing, please see Curriculum Committee recommendations for this course in the committee's meeting minutes)

_____ _____

Executive Dean for Academic Affairs Date

_____ 11.19.18

Vice President for Academic & Student Affairs Date

REVISED COURSE Checklist/Signatures
Complete checklist, signatures and submit with proposal for Curriculum Committee review

Course Number/Title: CS 285

Part 1: Course Details

- [x] Division/department info; course developer info; academic year change is desired to take effect
- [x] Course Details section filled out completely (prerequisites, co-requisites, grade options, credits, etc.)
- [x] Changes to Course section filled out completely
- [x] Course number, title, and description (brief overview, for student audience, avoids jargon)

Part 2: Rationale, Equity, Library, Course Overlap

- [x] Rationale and context for proposal
- [x] Curriculum equity statement
- [x] Library consultation completed
- [x] Course overlap (if applicable); dean approval required N/A

Part 3: Outcomes, Assessments, Topics

- [x] Includes learning outcomes, assessments, topics (course outline)

Part 4: Financial and Student Impact

- [x] We have conducted a financial impact analysis with the division dean of the proposed changes, including: Additional instructional costs; workload (both FT and PT faculty and classified staff); physical space requirements (e.g., labs); additional equipment needs; additional fees; any cost reductions
- [x] Additional instructional costs (staff, materials, services or facilities) will be incurred to offer this course. Explain additional costs in Part 4.
- [x] We have conducted a student impact analysis of the proposed changes, including: Effect of changes on program requirements, articulations, cost, credit load, avoiding excess credits in transfer, financial aid credit limits, completion, and enrollments; determination of how new/revised courses transfer to four-year schools (particularly in Oregon)

Part 5: Degree Requirements Applications (if applicable)

- [x] Degree requirements (AAOT, Human Relations, Cultural Literacy) forms submitted along with course form

ADDITIONAL INFORMATION

- [x] We have consulted all relevant academic advisor(s) about course articulation agreements and transfer issues.
- [x] We have informed the High School Connections Office about revisions to this course. Contact x3289
- [x] We have informed Co-operative Education about this new course. Contact x5203
- [x] Reviewed by faculty (discipline team and/or those affected by this course revision, including those in other divisions, departments, and programs). [Date reviewed xx/xx/xx]
- [x] Career technical programs: The Advisory Committee has been involved in this curriculum revision.
- [x] Contacted Academic Technology Center about developing an online course version (if applicable)

Special fees (if applicable)

- [x] Fee rationale and request forms were completed and turned in on [mm/dd/yyyy] (see COPPs Fees: Special)

Department review and signatures (required prior to submission).

- [x] Division Dean name/signature (signature indicates proposal approved, complete, ready for Curriculum Committee) _____ Date: 10/1/18
- [x] Administrative Coordinator name/signature _____ Date: 10/1/18
- [x] Librarian name/signature Meggie Wright M-W Date: 10/1/18
- [ ] Signature of dean approving course overlap (if applicable) _____ Date:

Incomplete forms will be returned | Curriculum changes must have dean approval | Submit completed forms using the online submission at https://www.lanecc.edu/currsched/submit-curriculum-proposals