University of Hawaii Maui College
ICS 171 - Introduction to Computer Security

1. **Course Alpha. Please click on the ? to the right for help.**

   ICS

2. **Course Number. Please click on the ? to the right for help.**

   171

3. **Course Title/Catalog Title. Please click on the ? to the right for help.**

   Introduction to Computer Security

4. **Number of Credits. Please click on the ? to the right for help.**

   3

5. **Contact Hours/Type. Please click on the ? to the right for help.**

   - Hour lecture (3)

6. **Course Description. Please click on the ? to the right for help.**

   Examines the essentials of computer security, including risk management, the use of encryption, activity monitoring, intrusion detection; and the creation and implementation of security policies and procedures to aid in security administration.

7. **Pre-Requisites. Please click on the ? to the right for help.**

   ICS 169 and either ICS 184 or ETRO 140, both with grade C or better, or consent.

8. **Co-requisites.**

   None

9. **Recommended Preparation.**

   None

10. **Is this a cross-listed course? Please click on the ? to the right for help.**

    NO

11. **Reason for Proposal. Why is this course being proposed or modified? This question requires specific information as part of the explanation. Please click on the ? to the right for help.**

    New course at UHMC based on existing identical course at LCC. Required course for the STEM ECET Certificate of Competency in Cybersecurity. Course is identical to ICS 171 taught at LCC. Course description at UHMC and LCC is identical. Course at UHMC and LCC is identical, equivalent and transferable. Students at UHMC can take the course taught at LCC and can transfer credits if they decide to move to LCC.

12. **Effective Semester and Year. For new or modified courses, the effective year is one year from the semester proposed. For example, if proposed in Spring 2012, the effective semester is Spring 2013. Please click on the ? to the right for help.**

   Fall 2015

13. **Grading Method. What grading methods may be used for this course? Please click on the ? to the right for help.**

   - Standard (Letter,Cr/NCr,Audit) (0)

14. **Is this course repeatable for credit? How often can this course be counted toward a degree or certificate? Please click on the ? to the right for help.**

   NO

15. **Course Student Learning Outcomes (SLOs). DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "COURSE LEARNING OUTCOMES" and enter in that screen. Please click on the ? to the right for help.**

Course SLO/Competency	Explain the role of IT security control and security service management frameworks	Explain business continuity, security in grid computing, and cloud computing	Analyze system security and performance metrics
Identify the potential risks and mitigations to various threats to a computing environment	☑	☑	☑
Identify and create security policies and procedures	☑		☑
Assess networking security tools and select those that maximize security given a particular networking environment.		☑	☑

Course SLO/PSLO	Utilize appropriate mathematics at the level of algebra and trigonometry to solve technical problems.	Apply project management techniques to electrical/electronic(s) and computer systems;	Demonstrate engineer's way of thinking, analyzing technology as systems
Identify the potential risks and mitigations to various threats to a computing environment	☑	☑	
Identify and create security policies and procedures		☑	☑
Assess networking security tools and select those that maximize security given a particular networking environment.	☑		

16. **Course Competencies. DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow**

button "COURSE COMPETENCIES/ISSUES/SKILLS" and enter text in that screen. Course competencies are smaller, simpler tasks that connect to and facilitate the SLOs.

Competency
Explain the role of IT security control and security service management frameworks
Explain business continuity, security in grid computing, and cloud computing
Analyze system security and performance metrics

17. **Recommended Course Content and Timeline. The course content facilitates the course competencies. Course content may be organized by weeks, units, topics or the like.**

This course covers all topics normally included in an introductory course in computer security, as evidenced by available texts in computer security fundamentals as well as industry certification exams. The course covers the most relevant topics needed for securing a networked environment. Individual course syllabi, study guides, and required assignments and readings indicate the breadth and depth of the course.

1. Week 1 - General Security Concepts 10%

2. Week 2 - Identifying Potential Risks 10%

3. Week 3 - 4 - Infrastructure and Connectivity 10%

4. Week 5 - 6 - Monitoring Activity and Intrusion Detection 10%

5. Week 7 - 8 - Implementing and Maintaining a Secure Network 10%

6. Week 9 - 10 - Application Data and Host Security 10%

7. Week 11 - 12 - Access Control and Identity Management 10%

8. Week 13 - 14 - Cryptography Basics, Methods and Standards 10%

9. Week 15 - Security Policies and Procedures 10%

10. Week 16 - Security Administration 10%

Evidence that the course reflects current theory and practice in computer security is gained by comparing the course syllabus and tutorials with those for similar computer security courses at other colleges. Evidence can also be found in the continued use of new editions of computer security texts, which reflect notions of currency by experts in the field.

18. **Program Learning Outcomes. DO NOT ENTER TEXT IN THE TEXT BOX BELOW. Click on the yellow button "PLOs" and enter text in that screen. Program Student Learning Outcomes (PLOs) supported by this course. If you are not a "program" use the Liberal Arts PLOs, view them by clicking on ? icon to the right.**

Program SLO
Utilize appropriate mathematics at the level of algebra and trigonometry to solve technical problems.
Apply project management techniques to electrical/electronic(s) and computer systems;
Demonstrate engineer's way of thinking, analyzing technology as systems

19. **College-wide Academic Student Learning Outcomes (CASLOs). FIRST, fill out the CASLO grid located in the UHMC tab above. Click on the HELP icon for tips on determining support for the CASLOs and indicate your choices below by clicking on the box in front of each supported CASLO. NOTE: Our campus does not use the Preparatory Level, Level 1 and Level 2 designations in the chart below.**

☑	**Creativity** - Able to express originality through a variety of forms. ☑ Level 2
☑	**Critical Thinking** - Apply critical thinking skills to effectively address the challenges and solve problems. ☑ Level 2
☑	**Information Retrieval and Technology** - Access, evaluate, and utilize information effectively, ethically, and responsibly. ☑ Level 2
☑	**Oral Communication** - Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes. ☑ Level 1
☑	**Quantitative Reasoning** - Synthesize and articulate information using appropriate mathematical methods to solve problems of quantative reasoning accurately and appropriately. ☑ Level 2
☑	**Written Communication** - Write effectively to convey ideas that meet the needs of specific audiences and purposes. ☑ Level 1

GenED SLO
Creativity - Able to express originality through a variety of forms.
Critical Thinking - Apply critical thinking skills to effectively address the challenges and solve problems.
Information Retrieval and Technology - Access, evaluate, and utilize information effectively, ethically, and responsibly.
Oral Communication - Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.
Quantitative Reasoning - Synthesize and articulate information using appropriate mathematical

methods to solve problems of quantative reasoning accurately and appropriately.
Written Communication - Write effectively to convey ideas that meet the needs of specific audiences and purposes.

20. **Linking. CLICK ON CHAIN LINK ICON IN UPPER RIGHT HAND CORNER TO BEGIN LINKING. Please click on the ? to the right for help.**

21. **Method(s) of delivery appropriate for this course. Please click on the ? to the right for help.**

    - Cable TV (0)
    - Classroom/Lab (0)
    - HITS/Interactive TV (0)
    - Hybrid (0)
    - Online (0)

22. **Text and Materials, Reference Materials, and Auxiliary Materials. Please click on the ? to the right for help.**

    A textbook is required.

    - Mark Ciampa. Security+ Guide to Network Security Fundamentals, 4e. 4e. Course Technology, 2012, 9781111640125.

23. **Maximum enrollment. Please click on the ? to the right for help.**

    35

24. **Particular room type requirement. Is this course restricted to particular room type? Please click on the ? to the right for help.**

    NO

25. **Special scheduling considerations. Are there special scheduling considerations for this course? Please click on the ? to the right for help.**

    NO

26. **Are special or additional resources needed for this course? Please click on the ? to the right for help.**

    No

27. **Does this course require special fees to be paid for by students? Please click on the ? to the right for help.**

    NO

28. **Does this course change the number of required credit hours in a degree or certificate? Please click on the ? to the right for help.**

No.

29. **Course designation(s) for the Liberal Arts A.A. degree and/or for the college's other associate degrees. Please click on the ? to the right for help.**

Degree	Program	Category
Associate in Arts:	Liberal Arts	LE - Elective
AS:	ECET - All	PE - Program Elective
AAS:	Bus. Tech - All	PE - Program Elective
BAS:	BAS - All	PE - Specialization/Program Electives
Developmental/ Remedial:		

30. **Course designation(s) for other colleges in the UH system.**

No. This is a new course at UHMC but identical to ICS 171 from LCC.

31. **Indicate the year and page # of UHMC catalog referred to. For new or modified courses, please indicate the catalog pages that need to be modified and provide a sheet outlining those changes.**

UHMC General Catalog 2014-2015. Modifications needed for 5 pages - Offerings on Page 10, CO Section page 28, ECET program page 45, ICS course descriptions page 126 and 127.

32. **College-wide Academic Student Learner Outcomes (CASLOs). Please click on the HELP icon for more information.**

Standard 1 - Written Communication Write effectively to convey ideas that meet the needs of specific audiences and purposes.		
Outcome 1.1 - Use writing to discover and articulate ideas.		2
Outcome 1.2 - Identify and analyze the audience and purpose for any intended communication.		2
Outcome 1.3 - Choose language, style, and organization appropriate to particular purposes and audiences.		2
Outcome 1.4 - Gather information and document sources appropriately.		2
Outcome 1.5 - Express a main idea as a thesis, hypothesis, or other appropriate statement.		2

Outcome 1.6 - Develop a main idea clearly and concisely with appropriate content.	2
Outcome 1.7 - Demonstrate a mastery of the conventions of writing, including grammar, spelling, and mechanics.	2
Outcome 1.8 - Demonstrate proficiency in revision and editing.	2
Outcome 1.9 - Develop a personal voice in written communication.	2
Standard 2 - Quantitative Reasoning Synthesize and articulate information using appropriate mathematical methods to solve problems of quantative reasoning accurately and appropriately.	
Outcome 2.1 - Apply numeric, graphic, and symbolic skills and other forms of quantitative reasoning accurately and appropriately.	3
Outcome 2.2 - Demonstrate mastery of mathematical concepts, skills, and applications, using technology when appropriate.	3
Outcome 2.3 - Communicate clearly and concisely the methods and results of quantitative problem solving.	3
Outcome 2.4 - Formulate and test hypotheses using numerical experimentation.	3
Outcome 2.5 - Define quantitative issues and problems, gather relevant information, analyze that information, and present results.	3
Outcome 2.6 - Assess the validity of statistical conclusions.	3
Standard 3 - Information Retrieval and Technology. Access, evaluate, and utilize information effectively, ethically, and responsibly.	
Outcome 3.1 - Use print and electronic information technology ethically and responsibly.	3
Outcome 3.2 - Demonstrate knowledge of basic vocabulary, concepts, and operations of information retrieval and technology.	3
Outcome 3.3 - Recognize, identify, and define an information need.	3
Outcome 3.4 - Access and retrieve information through print and electronic media, evaluating the accuracy and authenticity of that information.	3
Outcome 3.5 - Create, manage, organize, and communicate information through electronic media.	3
Outcome 3.6 - Recognize changing technologies and make informed choices about their appropriateness and use.	3
Standard 4 - Oral Communication Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.	
Outcome 4.1 - Identify and analyze the audience and purpose of any intended communication.	2
Outcome 4.2 - Gather, evaluate, select, and organize information for the communication.	2
Outcome 4.3 - Use language, techniques, and strategies appropriate to the audience and occasion.	2
Outcome 4.4 - Speak clearly and confidently, using the voice, volume, tone, and	2

articulation appropriate to the audience and occasion.		
Outcome 4.5 - Summarize, analyze, and evaluate oral communications and ask coherent questions as needed.		2
Outcome 4.6 - Use competent oral expression to initiate and sustain discussions.		2
Standard 5 - Critical Thinking Apply critical thinking skills to effectively address the challenges and solve problems.		
Outcome 5.1 - Identify and state problems, issues, arguments, and questions contained in a body of information.		3
Outcome 5.2 - Identify and analyze assumptions and underlying points of view relating to an issue or problem.		3
Outcome 5.3 - Formulate research questions that require descriptive and explanatory analyses.		3
Outcome 5.4 - Recognize and understand multiple modes of inquiry, including investigative methods based on observation and analysis.		3
Outcome 5.5 - Evaluate a problem, distinguishing between relevant and irrelevant facts, opinions, assumptions, issues, values, and biases through the use of appropriate evidence.		3
Outcome 5.6 - Apply problem-solving techniques and skills, including the rules of logic and logical sequence.		3
Outcome 5.7 - Synthesize information from various sources, drawing appropriate conclusions.		3
Outcome 5.8 - Communicate clearly and concisely the methods and results of logical reasoning.		3
Outcome 5.9 - Reflect upon and evaluate their thought processes, value system, and world views in comparison to those of others.		3
Standard 6 - Creativity Able to express originality through a variety of forms.		
Outcome 6.1: Generate responses to problems and challenges through intuition and non-linear thinking.		3
Outcome 6.2: Explore diverse approaches to solving a problem or addressing a challenge.		3
Outcome 6.3: Sustain engagement in activities without a preconceived purpose.		3
Outcome 6.4: Apply creative principles to discover and express new ideas.		3
Outcome 6.5: Demonstrate the ability to trust and follow one's instincts in the absence of external direction		3
Outcome 6.6: Build upon or adapt the ideas of others to create novel expressions or new solutions.		3

33. Additional Information