Knight Foundation School of Computing and Information Sciences

Course Title: Mobile and IoT Cybersecurity Policies and Practices **Date:** 1/18/2018

Course Number: CNT 4182

Number of Credits: 3

Subject Area: Security	**Subject Area Coordinator:** Amin Kharraz **email:** ak@cs.fiu.edu
Catalog Description: Emerging topics in policies and practices for mobile and IoT devices.	
Textbook: RIoT Control. Tyson Macaulay. 2016. 978-0-12-419971-2 Morgan Kaufmann	
Prerequisites Courses: CNT 4403 or EEL 4806	
Corequisites Courses: None	

Type: Required (CY), Elective (IT)

Prerequisite Topics:

- Fundamental concepts of Operating Systems
- Strong networking concepts, especially TCP/IP
- Basic security concepts
- Threat analysis and countermeasures.
- Quantitative and qualitative metrics for evaluating risks and countermeasures.

Course Outcomes:

1. Prepare a threat analysis and appropriate countermeasures for IoT and mobile.
2. Identify risks associated with various types of IoT and mobile assets and quantitative and qualitative metrics for evaluating risks and countermeasures.
3. Perform a comprehensive risk assessment for specified IoT and mobile assets.
4. Justify appropriate mitigation strategies by performing cost-benefit analysis.
5. Describe legal and ethical considerations related to the handling and management of IoT and mobile assets.
6. Develop an incident handling report
7. Create a business impact analysis (BIA) including cost-benefit analysis.

Outline

Topic	Number of Lecture Hours	Outcome
Models of security services and countermeasures	3	1
Threat analysis and appropriate countermeasures	7	2, 3, 4
Risk analysis using quantitative and qualitative metrics for evaluating risks and countermeasures	5	2, 3, 4
Mitigation strategies	3	5
Security audits (based on standards such as ISO 27000)	5	6, 10
Legal and ethical considerations related to the handling and management of enterprise information assets	5	7
Incident handling report	5	8, 10
Business Impact Analysis and Disaster Recovery	7	9, 10, 11

Assessment Plan for the Course & how Data in the Course are used to assess Program Outcomes

Student and Instructor Course Outcome Surveys are administered at the conclusion of each offering, and are evaluated as described in the School's Assessment Plan: https://abet.cs.fiu.edu/csassessment/

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Course Outcomes Emphasized in Laboratory Projects / Assignments

Outcome	Number of Weeks
Risk Analysis for IoT	3
Risk Analysis for mobile devices	5
Mitigation Strategies	2
IoT taxonomy development	

Oral and Written Communication: BIA, DR, IR

Number of written reports: 3
Approximate number of pages for each report: 5-7
Number of required oral presentations: 1
Approximate time for each presentation: 10 minutes

Social and Ethical Implications of Computing Topics

Describe legal and ethical considerations related to the handling and management of enterprise information assets. (7)

Theoretical Contents

Topic	Class Time
IAS Fundamentals (Models of IAS and Threat Assessment)	6 hrs
IAS Operations (IR, DR, Ethical Considerations)	15 hrs
IAS Risk Assessment & Mitigation	15 hrs
IAS Policy	6 hrs

Problem Analysis Experiences

N/A

Solution Design Experiences

N/A

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The Coverage of Knowledge Units within Computer Science Body of Knowledge[1]

Knowledge Unit	Topic	Type	Lecture Hours
IAS Fundamentals	Models of security services and countermeasures	Tier 1	3
IAS Threat Analysis	Threat analysis and appropriate countermeasures	Tier 1	7
IAS Threat Analysis	Risk analysis using quantitative and qualitative metrics for evaluating risks and countermeasures	Tier 1	5
IAS Operations	Mitigation strategies	Tier 1	3
IAS Operations	Security audits (based on standards such as ISO 27000)	Tier 1	5
IAS Operations	Legal and ethical considerations related to the handling and management of enterprise information assets	Tier 1	5
IAS Operations	Incident handling report	Tier 2	5
IAS Operations	Business Impact Analysis and Disaster Recovery	Tier 2	7
Total Hours			

[1] See https://www.acm.org/binaries/content/assets/education/cs2013_web_final.pdf for a description of Computer Science Knowledge units