DO NOT TYPE IN THIS BOX

Bulletin # : 3

Academic Year : 2022-23

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Proposal for a New Course

1. **School/College** College of Engineering and Computing

   Div./Dept. in Which Taught Knight Foundation School of Computing and Information Sciences

2. CTS | 1 | | | 3

   Alpha Prefix | 1st Digit | Last 3 Digits | "C"-lec-lab "L"-Lab | Cr. Hrs.

   CIP Code *(Leave this blank):* _____

   CTS 1500

3. **Grading Method (select one):** ■ Graded ☐ Pass/Fail

4a. **Course Title** Emerging Topics in Digital Life

b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Emerg Topics in Dig Life

LIMITED TO 25 Characters *(including spaces)*

5. **Statewide Course Numbering Subject Matter Area** COMPUTER TECHNOLOGY AND SKILLS

6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*

College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

Explore ever-changing boundaries between public and private digital lives, and the cultural and societal impacts of data collection,misinformation,media bias, cyber threats, and emerging technologies.

7. **Attach detailed syllabus course outline and course justification on separate page(s).**
8. **Prerequisite(s):** None
9. **Corequisite(s):** None
10. **Objective(s) of Course:**

1. Recognize boundaries, dangers and protections in public/private digital lives
2. Identify impacts of misinformation and media bias in the global arena
3. Explore info assurance careers

11. **Does this course duplicate/overlap other courses at FIU?** ■ No ☐ Yes

    If yes, please explain: _____

12. **What other closely related department(s) have been consulted about this course?**

    Department of Electrical and Computer Engineering

13. **Is this course used for the assessment of a program or a certificate (if yes, then send a notification to assessment@fiu.edu)?** ☑ **No** ☐ **Yes**

PROPOSAL REQUESTED BY:

Faculty Contact Patricia McDermott-Wells _____ 11 / 9 / 2022

(Type name) (Signature)

mcdwells@fiu.edu (305) 348-2844

(Email address) (Phone number)

Chairperson (Dept./Div.) Jason Liu _____ 11 / 21 / 2022

(Type name) (Signature)

Chairperson (Curr. Comm.) _____ ____ / ____ / 2022

(Type name) (Signature)

College/School Dean John Volakis _____ ____ / ____ / 2022

(Type name) (Signature)

Submit one original form. Attach one copy of the course justification and a draft of the course syllabus for this New Course Proposal. The syllabus should include the course description, objectives, learning outcomes, major topics, and textbooks.

FIU | Engineering & Computing

FLORIDA INTERNATIONAL UNIVERSITY

To: Mary Cossio
Faculty Senate

From: Dean or Assoc. Dean and College Curriculum Cmte. Chair

Subject: Memo in Lieu of Curriculum Chair and Dean Signatures for Bulletin #3

Date: November 24, 2022

As instructed by the Faculty Senate, this memo will serve as approval of the attached proposals for Bulletin #3 by our Curriculum Committee Chair, Alexander Afanasyev, and the Dean for College of Engineering and Computing (John L. Volakis), in lieu of physical signatures. The proposals in this Bulletin were approved by our Curriculum Committee on November 23, 2022.

In addition to the above, memos in lieu of signatures have also been included by departments unable to obtain physical signatures for their faculty contact and/or department chair.

FIU Engineering & Computing
FLORIDA INTERNATIONAL UNIVERSITY

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Subject: Memo in Lieu of Curriculum Chair and Dean Signatures for Bulletin #3

Date: November 24, 2022

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CTS-1XXX - Emerging Topics in Digital Life

Masoud Sadjadi <sadjadi@cs.fiu.edu> Mon, Nov 21, 2022 at 11:31 AM
To: Alexander Perez-Pons <aperezpo@fiu.edu>
Cc: Himanshu Upadhyay <upadhyay@fiu.edu>, Charlyne Walker <charlyne@fiu.edu>, Deidra Hodges <dhodges@fiu.edu>, Kemal Akkaya <kakkaya@fiu.edu>, Patricia McDermott-Wells <mcdwells@fiu.edu>, Nagarajan Prabakar <prabakar@cis.fiu.edu>, Trevor Cickovski <tcickovs@fiu.edu>

Many thanks for the quick response.

Sincerely,
-Masoud

Masoud Sadjadi, PhD

Associate Professor of Computer Science
Director of Agile Software & Autonomic Computing (ASAC) Lab.
Knight Foundation School of Computing and Information Sciences
Florida International University
University Park, ECS 212 E
11200 SW 8th St., Miami, FL 33199

Tel: 305-348-1835
Fax: 305-348-2336
Email: sadjadi@cs.fiu.edu
Web: www.cs.fiu.edu/~sadjadi

Florida International University Logo

On Mon, Nov 21, 2022 at 11:21 AM Alexander Perez-Pons <aperezpo@fiu.edu> wrote:

> The course is fully supported with no objections as we have discussed the course and compared it to existing courses in ECE.
>
> Best
>
> Alex

From: Himanshu Upadhyay <upadhyay@fiu.edu>
Sent: Monday, November 21, 2022 11:20 AM
To: sadjadiATcs <sadjadi@cs.fiu.edu>; Alexander Perez-Pons <aperezpo@fiu.edu>
Cc: Charlyne Walker <charlyne@fiu.edu>; Deidra Hodges <dhodges@fiu.edu>; Kemal Akkaya <kakkaya@fiu.edu>; Patricia McDermott-Wells <mcdwells@fiu.edu>; Nagarajan Prabakar <prabakar@cis.fiu.edu>; Trevor Cickovski <tcickovs@fiu.edu>
Subject: Re: CTS-1XXX - Emerging Topics in Digital Life

Thanks Masoud for reaching out. We support this course with no objection. This course will provide opportunity to the students in cyber, blockchain and quantum - emerging technologies.

Himanshu

From: Masoud Sadjadi <sadjadi@cs.fiu.edu>
Sent: Monday, November 21, 2022 11:00 AM
To: Alexander Perez-Pons <aperezpo@fiu.edu>; Himanshu Upadhyay <upadhyay@fiu.edu>
Cc: Charlyne Walker <charlyne@fiu.edu>; Deidra Hodges <dhodges@fiu.edu>; Kemal Akkaya <kakkaya@fiu.edu>; Patricia McDermott-Wells <mcdwells@fiu.edu>; Nagarajan Prabakar <prabakar@cis.fiu.edu>; Trevor Cickovski <tcickovs@fiu.edu>
Subject: CTS-1XXX - Emerging Topics in Digital Life

Dear Alex and Himanshu,

It was wonderful talking to you guys regarding our new course proposal, namely, CTS-1XXX - Emerging Topics in Digital Life. Would you please respond to this email and indicate that **you support this course with no objections**? We need the email for the new course proposal submission.

Sincerely,

-Masoud

Masoud Sadjadi, PhD

Associate Professor of Computer Science
Director of Agile Software & Autonomic Computing (ASAC) Lab.
Knight Foundation School of Computing and Information Sciences
Florida International University
University Park, ECS 212 E
11200 SW 8th St., Miami, FL 33199

Tel: 305-348-1835
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Web: www.cs.fiu.edu/~sadjadi

Florida International University Logo

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EXPERIMENTAL Spring 2023

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Academic Year : _____

FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
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   Div./Dept. in Which Taught Knight Foundation School of Computing and Information Sciences
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3. **Grading Method (select one):** ■ Graded ☐ Pass/Fail
4a. **Course Title** Emerging Topics in Digital Life
   b. **Abbreviated course Title** *(for computer class schedules, transcripts)* Emerg Topics in Dig Life
   LIMITED TO 25 Characters *(including spaces)*
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6. **Catalog Description/Major Topics** *(not to exceed 200 characters including spaces)*
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9. **Corequisite(s):** None
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    3. Explore info assurance careers
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Chairperson (Curr. Comm.) _____ (Type name) _____ (Signature) ____ / ____ / 2022

College/School Dean John Volakis (Type name) _____ (Signature) ____ / ____ / 2022

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FIU | Engineering & Computing

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Justification
CTS 1xxx – Emerging Topics in Digital Life

Course Developers:

Patricia McDermott-Wells, Ph.D.: Dr. McDermott-Wells has over 40 years of industry experience as a software developer and technology consultant, plus 22 years of teaching at FIU. She holds a doctorate in Computer Information Systems from Nova Southeastern University. Dr. McDermott-Wells has taught 23 different courses at FIU for KFSCIS and the Math Department. She has developed several courses within the KFSCIS IT degree, including the core security course CNT 4403. She also transitioned the computer ethics course into the current global learning course "Technology in the Global Arena".

Charlyne Walker, Ph.D.: Dr. Charlyne Walker has over 30 years of experience in education, with most of her experience as a faculty administrator managing technology projects. Dr. Walker has a strong background in technology management including software and database planning, disaster recovery planning as well as experience in technology planning. As the Director of Educational Technology for the College of Arts and Sciences, she served on a technology advisory board for the university tasked with reviewing the policies and procedures for information security. Dr. Walker holds a doctorate in Leadership and Education with a specialty in Educational Technology from Barry University. In addition, Dr. Walker holds a graduate certificate in Cybersecurity with a specialty in Digital Forensics from Capella University.

Catalog Description:

Explore ever-changing boundaries between public and private digital lives, and the cultural and societal impacts of data collection, misinformation, media bias, cyber threats, and emerging digital technologies.

Demand:

There is a severe shortage of cybersecurity-aware professionals in corporate, military, educational, and personal arenas.

Audience: Open to all students as a Global Learning Foundations course; potentially UCC (Social Sciences group 2);

Pre-reqs/Co-Reqs: None

Justification:

Students today are major consumers of technology, especially mobile devices, yet few are aware of the digital footprint they are creating, or how their data is being harvested, manipulated, and marketed. They are unaware how technology is being used to manipulate their belief systems and their buying decisions, and how it affects governance within their society.

There is a serious shortage of cybersecurity-aware professionals, with impacts on personal and national safety. Students do not understand that the term “cybersecurity” is not limited to technology only. Most students are unaware of how cybersecurity issues impact all aspects of careers and organizations within business, government, and the military.

This course is designed to provide a conceptual overview of technological and societal issues related to digital presence and digital assets at the global level, including personal, governmental, and organizational. It will raise awareness of the influence of digital security issues, digital threats, misinformation and media bias, and the legal and ethical aspects of digital assets in the global arena. It will focus on emerging trends and uses of digital technology, and how that transcends traditional geopolitical borders.

This course will include a group case study requiring problem decomposition, research, and critical thinking skills. Students will be assigned varying roles within the analysis tasks to ensure that multiple perspectives are brought to the analysis.

This course is designed to open the field of cybersecurity to a broader cohort of students, including traditionally underrepresented groups, who may not understand the full spectrum of cybersecurity needs and opportunities. This is an introductory course designed for students at any level of their bachelor degree program, open to students in any major.

Course Outcomes:

1. Characterize the impact of digital data collection and use in our culture, our society, and our personal and employment-related digital lives [Understand]
2. Describe tactics used by bad actors to spread misinformation and influence media bias in the global digital arena [Understand]
3. Analyze legal, political, and governance ramifications influenced by the changing digital landscape, and how this differs in the global arena [Analyze]
4. Assess the need for personal and organizational planning to safeguard digital assets and meet compliance requirements [Evaluate]
5. Summarize the need for awareness related to information assurance and compliance across the career spectrum [Understand]

Global Learning Outcomes

6. Global Awareness: Students will demonstrate knowledge of the interconnectedness between our public and private digital lives that transcend national and international boundaries. [Apply]
7. Global Perspectives: Students will conduct a multi-perspective analysis of the impact of misinformation and bias in media across national and global contexts. [Analyze]
8. Global Engagement: Students will demonstrate a willingness to engage in activities that analyze the impact of technology and information manipulation in geopolitical disagreements and conflicts. [Create]

Knight Foundation School of Computing and Information Sciences

Course Title: Emerging Topics in Digital Life **Date:** 11/04/2022

Course Number: CTS 1xxx

Number of Credits: 3

Subject Area: Cybersecurity	**Subject Area Coordinator:** Patricia McDermott-Wells, PhD **email:** mcdwells@fiu.edu
Catalog Description: Explore ever-changing boundaries between public and private digital lives, and the cultural and societal impacts of data collection, misinformation, media bias, cyber threats, and emerging technologies.	
Textbook: - Cybersecurity for Beginners, by Raef Meeuwisse, 2017 (978-1911452034)	
References: - Public Parts: How Sharing in the Digital Age Improves the Way We Work and Live, by Jeff Jarvis, 2011 (978-1451636000) - Emerging Media, by Jason Zenor, 2020 (978-1516536573) - Cybersecurity: The Beginner's Guide: A comprehensive guide to getting started in cybersecurity, by Erdal Ozkaya, 2019 (978-1789616194);	
Prerequisites Courses: None	
Corequisites Courses: None	

Type: General. *Potential UCC (University Core Curriculum), Global Learning*

This is a Global Learning Foundations course that counts toward the FIU Global Learning graduation requirement.

Prerequisites Topics:

- None

Course Outcomes:

1. Characterize the impact of digital data collection and use in our culture, our society, and our personal and employment-related digital lives [Understand]
2. Describe tactics used by bad actors to spread misinformation and influence media bias in the global digital arena [Understand]
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Relationship between Course Outcomes and Program Outcomes

BS in Computing: Student Outcomes	Course Outcomes
1) Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.	1, 6
2) Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline	N/A
3) Communicate effectively in a variety of professional contexts.	N/A
4) Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	3, 5
5) Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	8

Program Specific Student Outcomes

6) Apply computer science theory and software development fundamentals to produce computing-based solutions. [CS]	N/A

6) Apply security principles and practices to maintain operations in the presence of risks and threats. [CY]	2, 4, 7, 8

6) Use systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to accomplish user goals. [IT]	2, 4, 8

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/

Outline

Topic	Number of Lecture Hours	Outcome

• Introduction to Digital Life Issues
  ○ Basic concepts of digital life
  ○ Overview of Issues
	2	6

• Fundamentals of Information Assurance
  ○ Concepts and definitions
  ○ CIA Principles
  ▪ Basic types of attacks
  ○ Data protection strategies (identity multi-factor authentication, authorization, access control)
  ○ Secure communication concepts (https)
  ○ Keeping applications up to date
  ○ Forensics concepts
	4	2, 4

• Media Issues
  ○ Social media issues
  ▪ Authenticity of social media accounts (real or bots)
  ▪ Censorship by social media platforms
	8	1, 2, 3, 6, 7

▪ Uses and dangers of locational data (GPS and geotags) ▪ Effects on user attention spans and learning, self-images o Impacts of misinformation, disinformation, mal information ▪ Political ramifications ▪ Fake online shopping reviews ▪ Foreign interference in governance ▪ Effects on public trust ▪ Media bias vs. journalism ▪ Deepfakes o Virtual Reality/ Augmented Reality ▪ The Metaverse – crossing geopolitical boundaries		
• Technology and Social Issues o Social Engineering ▪ Concepts: Phishing, whaling, spear fishing, watering hole approaches ▪ Scareware and ransomware ▪ Pretexting ▪ How Social Engineering differs by culture o Cybernetics and Cyberwarfare ▪ Human enhancement for warfare ▪ Collateral damage of cyberwarfare between geopolitical groups ▪ Hacking/Hactivism	3	1, 2, 3, 7, 8
• Privacy and Anonymity o Role of technology o Anonymity pros and cons o Government surveillance of its citizens in diverse areas of the globe o IoT and mobile device privacy issues o Legal and compliance aspects o Global issues/differences	4	1, 2, 3, 4, 6, 7, 8
o		

• Emerging Technology Issues o Blockchain ▪ Basic concepts ▪ Is it a solution for privacy, voting, etc.? ▪ Cryptocurrency concepts • Its use with ransomware ▪ NFTs o Artificial Intelligence ▪ Its use in decision making ▪ Social impact of bias in AI algorithms o Quantum computing ▪ Basic concepts ▪ Its role in security ▪ Global impacts	2	1, 3, 6
• Organizational Issues o Data storage – legal and compliance issues o IR/DR principles, planning, responses o Breaches – costs, reporting, legal and compliance issues o Hacking (ethical/unethical) & Pen Testing (red team/blue team concepts)	3	4, 5
• Careers and certifications in Information Assurance o Information assurance and compliance career paths o Information assurance and compliance certifications o Responsibilities of a CISO o Cyber threat resources used by information assurance professionals	4	5

Learning Outcomes: (Familiarity->Usage->Assessment)

<u>Human and Societal Digital Impacts:</u>

1. Analyze an incident related to the use of misinformation or disinformation involving public trust issues, buying trends, or local and global governance. [Assessment]

2. Assess the possible implications and impacts of media bias. [Assessment]

3. Analyze an incident in which cyberwarfare had global implications [Assessment]
4. Understand the potential legal and personal implications of the use of deepfake technology [Familiarity]
5. Understand how locational data is collected and used in our personal and professional lives [Familiarity]
6. Differentiate among the diverse types of social engineering. [Familiarity]
7. Analyze an incident in which social engineering led to a major data breach. [Assessment]

Blockchain

1. Identify the major benefits and uses of blockchain technology [Familiarity]
2. Compare and contrast pros and cons of digital currency with fiat currency [Usage]
3. Explore blockchain technology as related to voting [Familiarity]

Artificial Intelligence

1. Identify the major benefits of artificial intelligence for decision-making tasks. [Familiarity]
2. Summarize the major issues surrounding AI related to the possibility of biased results. [Familiarity]

Virtual Worlds

1. Identify the major benefits and disadvantages of virtual reality, augmented reality, and the metaverse. [Familiarity]
2. Describe the implication of virtual worlds on society and governance. [Usage]

Quantum Computing

1. Identify the major possible benefits and unintended consequences of quantum computing [Familiarity]

Basic Digital Information Assurance Concepts:

1. List the key components of the CIA principles of security. [Familiarity]
2. Identify tactics used by bad actors in the digital arena [Familiarity]
3. Describe the different personal and organizational practices that are necessary to protect against digital attacks. [Usage]

Privacy and Anonymity:

1. Compare and contrast the benefits and disadvantages of personal privacy protections and anonymity, on both a local and global scale. [Usage]
2. Analyze an incident where anonymity resulted in a significant negative outcome. [Assessment]
3. Compare and contrast the benefits and dangers of U.S. and foreign governments' surveillance of its citizens. [Usage]

4. Differentiate among regional differences in privacy legislation. [Familiarity]

Organizational Security Issues

1. Identify the need for organizational planning related to digital assets [Familiarity]
2. Identify the major phases and artifacts of disaster recovery planning. [Familiarity]
3. Describe the major legal and compliance requirements that organizations must meet. [Familiarity]

Certification and Career Opportunities in Information Assurance

1. Identify career paths in the fields of information assurance and compliance. [Familiarity]
2. Identify professional certifications in the fields of information assurance and compliance. [Familiarity]

Course Outcomes Emphasized in Laboratory Projects / Assignments

Outcome	Number of Weeks
1. Review case studies in social engineering, misinformation/media bias Outcomes: 1, 2, 3	2
2. Discussion forums (6) Outcomes: 1, 2, 6, 7, 8	6
3. Create a case study based on a global cyberwarfare incident (Group activity) Outcomes: 1, 2, 3, 4, 5, 6, 7, 8 Global learning will be assessed via this case study.	4

Oral and Written Communication:

Written Reports		Oral Presentations	
Number Required	Approx. Number of pages for each	Number Required	Approx. Time for each
6 Discussion Forums based on readings and other course material for: (1) Privacy and Anonymity, (2) Media Bias, (3) Misinformation and Media Bias, (4) Social Engineering, (5) Blockchain, (6) AR, VR and the metaverse	1-2	0	0

2 Review of case studies readings	1		
1 Reflection on invited guest speaker or other course-sanctioned co-curriculum activity	1		
1 Group project: Create a case study to analyze a recent cyberwarfare incident with global implications. Include an infographic/poster for display.	3-4		

Social and Ethical Implications of Computing Topics:

Topic	Class time	Student Performance Measures
Impacts of misinformation, disinformation, and mal information	4	Discussion forums, quizzes
Privacy and Anonymity – benefits and dangers	3	Discussion forums, quizzes
Hacking (ethical and unethical) & Penetration Testing (red team/blue team)	2	Quizzes
Cyberwarfare	6	Quizzes, group case study
AR, VR and the metaverse	3	Discussion forums, quizzes

Approximate number of credit hours devoted to fundamental CY topics[1]

Topic	Core Hours	Advanced Hours
Data Security:	8	0
Software Security:	2	0
Component Security:	0	0
Connection Security:	2	0
System Security:	2	0
Human Security:	16	0

[1] See https://www.acm.org/binaries/content/assets/education/curricula-recommendations/csec2017.pdf for a description of Knowledge units

Knight Foundation School of Computing and Information Sciences
CGS 1xxx
Emerging Topics in Digital Life

Theoretical Contents

Topic	Class time
Fundamentals of Information Assurance	4

Problem Analysis Experiences

Review and create case studies

The Coverage of Knowledge Units within Computer Science Body of Knowledge[2]

Area: Knowledge Unit	Topic	Lecture Hours
Data Security: Basic concepts	Fundamental concepts of digital life	1
Data Security: Data Privacy	Privacy & Anonymity issues Social engineering	1
Data Security: Information Storage Security	Organizational Issues Legal and compliance requirements	1
Data Security: Data Integrity and Authentication	Basic digital protection strategies	1
Data Security: Secure Communication Protocols	Secure communication concepts	1
Data Security: Digital Forensics	Fundamentals – hacking; red team/blue team; penetration testing	1
Software Security: Deployment & Maintenance	Keeping applications up to date	1
Software Security: Ethics	Hacking and Penetration Testing Media Bias Impacts of Misinformation, disinformation, mal information	2
Connection Security: World Wide Web	Secure Communication Concepts	1
Connection Security: Vulnerabilities and example exploits	Basic types of attacks Tactics used by bad actors Cyberwarfare	2

[2] See https://www.acm.org/binaries/content/assets/education/curricula-recommendations/csec2017.pdf for a description of Knowledge units

Knight Foundation School of Computing and Information Sciences
CGS 1xxx
Emerging Topics in Digital Life

System Security: System Management	Keeping applications up to date Basic types of attacks Tactics used by bad actors Hacking & penetration testing	1
System Security: System Testing	Hacking & penetration testing	1
Human Security: Social Engineering	Social Engineering Social Media Issues Misinformation, disinformation, mal information Media Bias	4
Human Security: Social & Behavioral Privacy	Privacy & Anonymity Issues Social Engineering	2
Human Security: Identity Management	Identification, multi-factor authentication, authorization	1
Organizational Security: Risk Management	Organizational Issues – Risk management	1
Organizational Security: Security Governance & Policy	Organizational Issues – Legal and compliance requirements Global issues/differences	2
Organizational Security: Laws, Ethics & Compliance	Organizational Issues – Legal and compliance issues	1
Organizational Security: Business Continuity, Disaster Recovery, and Incident Management	Organizational Issues – IR/DR principles	1
Societal Security: Cybercrime	Social Engineering Cyberwarfare Misinformation/disinformation	2
Societal Security: Cyber Law	Legal and Compliance Issues Privacy Data storage	1
Societal Security: Cyber Ethics	Hacking (ethical and unethical) Penetration testing (red team/blue team) Privacy policies Media Bias	1
Societal Security: Privacy	Privacy & Anonymity Misinformation/disinformation	1

Knight Foundation School of Computing and Information Sciences
CGS 1xxx
Emerging Security Topics in Digital Life

Week #	Topic Schedule	Assignments	Activities
1	Lecture: Course introduction; Key concepts in digital life; fundamentals of info assurance	Library Research Tutorial	
2	Lecture & Discussion: Privacy & Anonymity	Discussion Forum #1	Additional readings
3	Active learning session	Quiz #1	Case Study #1 - Privacy & Anonymity - in-class small group
4	Lecture & Discussion: Media Bias	Discussion Forum #2	Additional readings
5	Active learning session	Quiz #2	Small group research/presentation of assigned subtopics
6	Lecture & Discussion: Misinformation & Media Bias	Discussion Forum #3	Additional readings
7	Active learning session	Quiz #3	Case Study #2- Misinformation & Media Bias - in-class small group
8	Lecture & Discussion: Social Engineering	Discussion Forum #4	Videos; Additional readings
9	Active learning session	Quiz #4	Small group research/presentation of assigned subtopics
10	Lecture & Discussion: Intro to Block Chain & Cryptocurrencies	Discussion Forum #5	Additional readings
11	Lecture & Discussion: Intro to Artificial Intelligence & Data Mining	Quiz #5	Small group research/presentation of assigned subtopics
12	Lecture & Discussion: Augmented Reality, Virtual Reality, and the Metaverse	Discussion Forum #6	Begin group project: Cyberwarfare incident analysis
13	Lecture & Discussion: Hacking, Hacktivism, Cybernetics & Cyberwarfare	Quiz #6	Continue group project: Cyberwarfare incident analysis
14	Lecture & Discussion: Cybersecurity Careers; Organizational Issues; Legal Aspects & Compliance	Group Project paper	Continue group project: Cyberwarfare incident analysis
15	Active learning session: Group Presentations		Group presentations
16	Guest Lecturer: Various topics	Reflection written report	

Knight Foundation School of Computing and Information Sciences
CGS 1xxx
Emerging Security Topics in Digital Life

Activities/Assignment weighting	
Category	**Weight**
Quizzes: 6 at 3% each	18%
Library Research Tutorials	3%
Discussion Forums: 6 at 4% each	24%
Group Project Paper	25%
Group Project Presentation	20%
Guest Speaker Reflection Report	5%
Participation/Attendance	5%
	100%

Grading Scale	
Threshold %	**Letter Grades**
0	F0
20	F
60	D
73	C
77	C+
80	B-
83	B
87	B+
90	A-
93	A

CTS 1xxx GL Assignments

Course Developers: Patricia McDermott-Wells, Ph.D. and Charlyne Walker, Ph.D.

These are the planned assignments that will be used to assess global learning.

Outcome #1:

Students will conduct a multi-perspective analysis of the impact of misinformation and bias in media across national and global contexts.

Discussion on Media Bias and Misinformation

In the lectures, we have looked at many examples of misinformation and media bias. Select one of the following options as your discussion topic:

- Effects of misinformation on trust and public health issues
- Effects of media bias on local, regional, or national elections

Requirements:

- Select an incident with global implications that has occurred within the last 3 years.
- Find at least 2 valid articles that clearly detail the type and scope of misinformation related to the incident you have selected. List those articles as your references in your post.
- Describe the actual or potential harms that the misinformation or bias has caused or may cause. Remember to present both sides of the issue so that you are not simply repeating misinformation (you may need more than 2 articles to get a clearer understanding of what is and is not valid information).
- Compare the issue and its impacts in more than one global region or country.
- Make one original post, and at least one response to another student's post. Follow the general discussion forum post requirements regarding originality, inline citations, and references.

Outcome #2:

Students will demonstrate knowledge of the interconnectedness between our public and private digital lives that transcend national and international boundaries.

Discussion on Virtual Reality

In the lectures, we have examined the potential benefits and concerns related to the use of augmented reality (AR), virtual reality (VR) and the metaverse.

- Select one existing or proposed VR application product that involves a virtual world environment. Discuss the societal and governance implications of a virtual world that transcends geopolitical borders.

Requirements:

- Describe the actual or potential benefits and harms that the VR world may cause.

- Discuss the reasons and justifications why nations may wish to restrict (or already have restricted) access to this virtual world.
- Make one original post, and at least one response to another student's post. Follow the general discussion forum post requirements regarding originality, inline citations, and references.

Outcome #3:

Students will demonstrate willingness to engage in activities that address technology and information manipulation in geopolitical disagreements and conflicts.

Case Study on Technology and Information Manipulation in Geopolitical Disagreements and Conflicts

[This is a group project.]

The use of misinformation and subterfuge in regional and political conflicts is not new. We have already looked at the Trojan Horse incident from ancient history as a case of misinformation to gain a military advantage. Read about another example from World War II, the Ghost Army: https://www.history.com/news/ghost-army-world-war-ii

Now read about the danger of fake news in social conflict, remembering that what starts as a local social conflict can escalate into a regional or global conflict: https://www.cits.ucsb.edu/fake-news/danger-social

Each student in your team has been assigned a specific role in building this case study, to ensure that various perspectives will be included in your team analysis.

Requirements:

- Review your notes from our guest lecturer, who discussed the use and implications of misinformation from a military perspective.
- Create a case study report, using the provided framework template, to detail an incident (or ongoing situation) in which information manipulation through the use of technology is causing the incident or significantly contributing to conflict escalation.
- Create a one-page poster/infographic that summarizes the contents of your case study. The top 10 submissions will be printed on our large-scale poster printer, and your team will be invited to display at the College of Engineering Senior Project Day expo.

Global Learning Course Assessment Matrix

Faculty Name: Patricia McDermott-Wells and Charlyne Walker
Course: CTS 1XXX
Academic Unit: KFSCIS Degree Program: BS-CY Semester Assessed:

Global Learning Student Learning Outcome Addressed	**Assessment Method**	**Assessment Results**
Global Awareness: Students will be able to demonstrate knowledge of the interrelatedness of local, global, international, and intercultural issues, trends, and systems. **Course Learning Outcome** Students will demonstrate knowledge of the interconnectedness between our public and private digital lives that transcend national and international boundaries.	Assessment Activity/Artifact: *Select one existing or proposed VR application product that involves a virtual world environment. Discuss the societal and governance implications of a virtual world that transcends geopolitical borders.* Requirements: - Describe the actual or potential benefits and harms that the VR world may cause. - Discuss the reasons and justifications why nations may wish to restrict (or already have restricted) access to this virtual world. Evaluation Process: Make one original post, and at least one response to another student's post. Follow the general discussion forum post requirements regarding originality, inline citations, and references. Minimum Criteria for Success: *Student has an original post plus a response to another student's post with substantial topic content and acceptable quality references. Rubric score must be 80% or better.* Sample: All students will be assessed	*To be entered after each time course is taught*
Use of Results for Improving Student Learning		
To be entered after each time course is taught		

Global Learning Course Assessment Matrix

Faculty Name: Patricia McDermott-Wells and Charlyne Walker
Course: CTS 1XXX
Academic Unit: KFSCIS Degree Program: BS-CY Semester Assessed:

Global Learning Student Learning Outcome Addressed	**Assessment Method**	**Assessment Results**
Global Perspective: Students will be able to conduct a multi-perspective analysis of local, global, international, and intercultural problems. **Course Learning Outcome** Students will conduct a multi-perspective analysis of the impact of misinformation and bias in media across national and global contexts.	Assessment Activity/Artifact: Discussion Forum Posts Select one of the following options as your discussion topic: - Effects of misinformation on trust and public health issues - Effects of media bias on local, regional, or national elections Requirements: - Select an incident with global implications that has occurred within the last 3 years. - Find at least 2 valid articles that clearly detail the type and scope of misinformation related to the incident you have selected. List those articles as your references in your post. - Describe the actual or potential harms that the misinformation or bias has caused or may cause. Remember to present both sides of the issue so that you are not simply repeating misinformation (you may need more than 2 articles to get a clearer understanding of what is and is not valid information). - Compare the issue and its impacts in more than one global region or country. Evaluation Process: Make one original post, and at least one response to another student's post. Follow the general discussion forum post requirements regarding originality, inline citations, and references. Minimum Criteria for Success: *Student has an original post plus a response to another student's post with substantial topic content and acceptable quality references. Rubric score must be 80% or better.* Sample: All students will be assessed	*To be entered after each time course is taught*
Use of Results for Improving Student Learning		

Global Learning Course Assessment Matrix

Faculty Name: Patricia McDermott-Wells and Charlyne Walker
Course: CTS 1XXX
Academic Unit: KFSCIS Degree Program: BS-CY Semester Assessed:

Global Learning Student Learning Outcome Addressed	Assessment Method	Assessment Results
To be entered after each time course is taught		

Global Learning Student Learning Outcome Addressed	Assessment Method	Assessment Results
Global Engagement: Students will be able to demonstrate willingness to engage in local, global, international, and intercultural problem solving. **Course Learning Outcome** Students will demonstrate willingness to engage in activities that address technology and information manipulation in geopolitical disagreements and conflicts.	Assessment Activity/Artifact: *Case Study on Technology and Information Manipulation in Geopolitical Disagreements and Conflicts* Each student in your team has been assigned a specific role in building this case study, to ensure that various perspectives will be included in your team analysis. Requirements: - Review your notes from our guest lecturer, who discussed the use and implications of misinformation from a military perspective. - Create a case study report, using the provided framework template, to detail an incident (or ongoing situation) in which information manipulation through the use of technology is causing the incident or significantly contributing to conflict escalation. - Create a one-page poster/infographic that summarizes the contents of your case study. Minimum Criteria for Success: *Student team produces 3-4 page paper with substantial topic content that thoroughly explores the topic and includes a global perspective, with acceptable quality references. Rubric score must be 80% or better.*	*To be entered after each time course is taught*

Global Learning Course Assessment Matrix

Faculty Name: Patricia McDermott-Wells and Charlyne Walker
Course: CTS 1XXX
Academic Unit: KFSCIS Degree Program: BS-CY Semester Assessed:

Global Learning Student Learning Outcome Addressed	Assessment Method	Assessment Results
	Student team also produces an engaging 1-page infographic summarizing their topic exploration. Rubric score must be 80% or better. Sample: All students will be assessed	
Use of Results for Improving Student Learning		
To be entered after each time course is taught		

CTS-1XXX - Emerging Topics in Digital Life

Masoud Sadjadi <sadjadi@cs.fiu.edu> Mon, Nov 21, 2022 at 11:31 AM
To: Alexander Perez-Pons <aperezpo@fiu.edu>
Cc: Himanshu Upadhyay <upadhyay@fiu.edu>, Charlyne Walker <charlyne@fiu.edu>, Deidra Hodges <dhodges@fiu.edu>, Kemal Akkaya <kakkaya@fiu.edu>, Patricia McDermott-Wells <mcdwells@fiu.edu>, Nagarajan Prabakar <prabakar@cis.fiu.edu>, Trevor Cickovski <tcickovs@fiu.edu>

Many thanks for the quick response.

Sincerely,
-Masoud

Masoud Sadjadi, PhD

Associate Professor of Computer Science
Director of Agile Software & Autonomic Computing (ASAC) Lab.
Knight Foundation School of Computing and Information Sciences
Florida International University
University Park, ECS 212 E
11200 SW 8th St., Miami, FL 33199

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Fax: 305-348-2336
Email: sadjadi@cs.fiu.edu
Web: www.cs.fiu.edu/~sadjadi

Florida International University Logo

On Mon, Nov 21, 2022 at 11:21 AM Alexander Perez-Pons <aperezpo@fiu.edu> wrote:

> The course is fully supported with no objections as we have discussed the course and compared it to existing courses in ECE.
>
> Best
>
> Alex

From: Himanshu Upadhyay <upadhyay@fiu.edu>
Sent: Monday, November 21, 2022 11:20 AM
To: sadjadiATcs <sadjadi@cs.fiu.edu>; Alexander Perez-Pons <aperezpo@fiu.edu>
Cc: Charlyne Walker <charlyne@fiu.edu>; Deidra Hodges <dhodges@fiu.edu>; Kemal Akkaya <kakkaya@fiu.edu>; Patricia McDermott-Wells <mcdwells@fiu.edu>; Nagarajan Prabakar <prabakar@cis.fiu.edu>; Trevor Cickovski <tcickovs@fiu.edu>
Subject: Re: CTS-1XXX - Emerging Topics in Digital Life

Thanks Masoud for reaching out. We support this course with no objection. This course will provide opportunity to the students in cyber, blockchain and quantum - emerging technologies.

Himanshu

From: Masoud Sadjadi <sadjadi@cs.fiu.edu>
Sent: Monday, November 21, 2022 11:00 AM
To: Alexander Perez-Pons <aperezpo@fiu.edu>; Himanshu Upadhyay <upadhyay@fiu.edu>
Cc: Charlyne Walker <charlyne@fiu.edu>; Deidra Hodges <dhodges@fiu.edu>; Kemal Akkaya <kakkaya@fiu.edu>; Patricia McDermott-Wells <mcdwells@fiu.edu>; Nagarajan Prabakar <prabakar@cis.fiu.edu>; Trevor Cickovski <tcickovs@fiu.edu>
Subject: CTS-1XXX - Emerging Topics in Digital Life

Dear Alex and Himanshu,

It was wonderful talking to you guys regarding our new course proposal, namely, CTS-1XXX - Emerging Topics in Digital Life. Would you please respond to this email and indicate that **you support this course with no objections**? We need the email for the new course proposal submission.

Sincerely,

-Masoud

Masoud Sadjadi, PhD

Associate Professor of Computer Science
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