УКРАЇНСЬКО-АМЕРИКАНСЬКИЙ
УНІВЕРСИТЕТ КОНКОРДІЯ

UKRAINIAN-AMERICAN
CONCORDIA UNIVERSITY

Україна, 01030, м. Київ, вул. Пирогова, 9
+380(44)236-19-16; 486-06-66; +380(50)331-42-95

www.concordia.edu.ua
info@uacu.edu.ua

9, Pirogov street, Kyiv, 01030, Ukraine
+380(44) 236-19-16, 486-06-66; +380(50)331-42-95

Information Assurance and Systems Security
Syllabus
CSCI-344

Specialty: 073 "Management"
Educational program "nformation Technology Management"

Quarter/Year: Spring/2023
Instructor: Ruslana Selezneva
Contact information:
ruslana.seleznova@uacu.edu.ua

ECTS Credits: 6
US Credits: 3

Prerequisites: Mathematics for Economics, Introduction to Programming

Course Description

In this course students learn basics of information security, in both management aspect and technical aspect. Students understand of various types of security incidents and attacks, and learn methods to prevent, detect and react incidents and attacks. Students will also learn basics of application of cryptography which are one of the key technology to implement security functions.

Course Outcomes

PH2. Keep the moral, cultural, scientific value and increase the achievements of society, using different types and forms of physical activity for maintaining a healthy lifestyle.
PH3. Demonstrate knowledge of theories, methods and functions of management, modern concepts of leadership.
PH6. Identify skills of search , collection and analysis of information , calculation of indicators to justify management decisions.
PH7. Demonstrate organizational design skills.
PH8. Apply management methods to ensure the effectiveness of the organization.
PH9. Demonstrate skills of interaction, leadership, teamwork.
PH11. Demonstrate skills of situation analysis and communication in various areas of the organization.
PH14. Identify the causes of stress , adapt yourself and the members of the team to the stressful situation, finding ways to neutralize it.

Competencies
3К2. Ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology, use different types and forms of motor activities for active recreation and a healthy lifestyle.
3К5. Knowledge and understanding of the subject area and understanding of professional activity.
3К8. Skills in the use of information and communication technologies.
СК2. Ability to analyze the results of the organization, to compare them with the factors of external and internal environment.
СК5. Ability to manage the organization and its departments through the implementation of management functions.
СК13. Understanding of the principles and norms of law and use them in professional activities.

Internationality: international software, international textbooks

Communications
For individual issues, students should contact the professor ONLY by given e-mail or by Moodle. In the Subject line they should put: UACUFirstNameLastName. E-mail messages will normally be answered within 24 hours.
Note! Only emails sent from the student's corporate email address will be answered.

Student Responsibilities

Time Commitment
The study of technical courses is cumulative (i.e., an understanding of earlier material is necessary to grasp concepts covered later). Past experience has shown a high correlation between procrastination and low grades. Students must be committed to completing tasks on time.
Technical Aspects
The student is obliged to provide himself/herself with all the necessary technical equipment for the educational process (laptop or computer, webcam, headsets or headphones and microphone), as well as access to the Internet.
Only students signed-in with their own first and last name are allowed into video lectures in Zoom.

Grading Policy
The course is based on mastery of course outcomes. Student grades for this course will be calculated based on performance. Note: the minimal grade to pass a subject is 60%.

Graduate Grading Guidelines
The assignment of a letter grade for a course is an indication of the student's overall success in achieving the learning outcomes for the course. The course letter grade may be viewed as a summary statement of the student's achievement in individual assessments (assignments & activities). These assessments are intended to identify for students their

strengths as well as those areas in need of improvement. Student work is assessed according to the guidelines below.

Course-level Grading guidelines:

Grade	ECTS Grade	International Grade
90% - 100%	A	5 (Excellent)
83% - 89%	B	4 (Very Good)
75% - 82%	C	4 (Good)
70% - 74%	D	3 (Good)
60% - 69%	E	3 (Acceptable)
35% - 59%	FX	Not acceptable, possible repetition of course

Criteria for grading:

ECTS grade	Requirements for the student
A	The student demonstrated a comprehensive systemic and in-depth knowledge of program material; processed basic and additional literature; obtained a solid grasp of the conceptual apparatus, methods, techniques and tools provided by the program; found creative abilities in the presentation of the educational program material both on this issue and on related modules of the course and related courses, or the student had a current control of 90-100 points
B	The student demonstrated good knowledge of program material; processed the basic literature, mastered the conceptual apparatus, methods, techniques and tools provided by the program, but with some inaccuracies
C	
D	The student showed mediocre knowledge of the core program material; learned information mainly from a lecture course or just one textbook; mastered only certain methods, techniques and tools provided by the program
E	
FX	The student has significant gaps in knowledge of the main program material; fragmentary mastered the basic concepts, techniques and tools; significant mistakes are made when using them

Maximum total possible points – 225 points incl.
(Midterm and Final exam are 60% of overall evaluation,
where Midterm – 20% and Final – 40%) ·Test/ Assignment / Project – 3/3 points (several times during the course)
Midterm exam – 45 points
Final exam – 90 points

Student Workload

It is assumed that for each out of 17 class sessions a student spends about 10.5 academic hours. of work. This includes 3.5 academic hours of lectures with the instructor and 7 academic hours of personal work. Personal work includes home work assignments, tests and working on the course materials.
Please pay attention that 1 academic hour equals to 40 minutes.

Assignment Format

• All work should be shown in time. If the student misses the deadline – the task is failed.
• Midterm covered topics from previous lectures (weeks 1-6). It included multiple choice questions and cases (essays) and took about 45 min.
• The Final exam covered all course material and included multiple choice questions and cases (essays). It lasts for 1.5 hours. Admission to the Final exam is possible only if all the tasks of the curriculum are covered.
• After the Midterm and Final is graded a student has access to the grade only. Access to the attempt, corrects answers and information whether the answer is correct cannot be granted.

Academic dishonesty

Academic integrity is submitting one's own work and properly acknowledging the contributions of others. Forms of academic dishonesty include:

1. Plagiarism – submitting all or part of another's work as one's own in an academic exercise such as an examination, a computer program, or written assignment.
2. Cheating – using or attempting to use unauthorized materials on an examination or assignment, such as using unauthorized texts or notes or improperly obtaining (or attempting to obtain) copies of an examination or answers to an examination.
3. Facilitating Academic Dishonesty – helping another commit an act of dishonesty, such as substituting for an examination or completing an assignment for someone else.
4. Fabrication – altering or transmitting, without authorization, academic information or records.

Any violation of these rules constitutes academic dishonesty and is liable to result in a failing grade and disciplinary action. In case of any academic dishonesty a student is not allowed to continue or retake the assessment activity and for the Final the unsatisfactory grade ("0") is assigned for the course total. Cases of the academic dishonesty are not considered by the Academic Council.

Midterm and Final are valid only if they are taken on-campus (room defined by the dean's office) and on UACU's computer/laptop or online on the student's computer/laptop using Zoom and other conditions defined by the dean's office to avoid the cases of academic dishonesty. Students who will not meet this requirement will be expelled from the course with grade "0".

In case of missed Midterm or Final exam (for a valid reason like sickness or an emergency) a request to repeat the exam is possible. Permit to repeat a midterm or final exam is done through a letter to the dean's office with request and approval of subject lecturer.

Submission or retaking of any assessment activities after deadlines are forbidden.

Submission & Return Policy

Assignments must be submitted to the professor on or before the due date indicated in the Course Schedule. The assignments submitted after the due dates receive zero points.

****** NO MAKE –UP QUIZZES AND EXAMS******

Schedule

Week #	Research Projects	Assignments Due	Points
Lecture 1	Topic I. Overview of Information Security 1. Orientation (learning objectives, performance evaluation, etc.) 2. What is Information Security? 3. Examples of Information Security Incidents 4. What is Information Security Management	Review Lecture Test / Assignment	3/3
Lecture 2	Topic 2: Basics of Information Security and Human aspects 1. The three concepts of Information Security (Confidentiality, Integrity, Availability) 2. Basic terminologies in Information Security 3. Human Aspect of Information Security 4. Social Engineering Lesson	Review Lecture Test / Assignment	3/3
Lecture 3	Topic 3: Information Security for Server Systems. 1. Attacks to Server Systems connected to the Internet and counter measures 2. Attacks to Web Servers and counter measure 3. Denial of Service Attack 4. Attacks to Network Systems Lesson	Review Lecture Test/Project	3/3
Lecture 4	Topic 4: Information Security for Client devices. 1. Attacks for Personal Computers and Smart phones, and counter measure 2. How the malicious software intrude the device 3. What the malicious software does to the system 4. Stolen and Lost Devices Lesson	Review Lecture Test / Assignment	3/3
Lecture 5	Topic 5: Information Security Risk Management 1. What is Risk Management process 2. Identifying Information Assets 3. Identifying Security Risk and evaluation 4. Risk Treatment Lesson	Review Lecture Test / Assignment	3/3
Lecture 6	Topic 6: Information Security Risk Management Exercise. 1. Identifying Information Assets 2. Identifying Security Risk and evaluation 3. Risk Treatment	Review Lecture Test / Assignment	3/3
Lecture 7 10:00 29-04-2023 20:00 30-04-2023	Mid Term (20%)	Review Lecture Test / Assignment	45
Lecture 8	Topic 7: Security Risk management as an Organization 1. Information Security Governance 2. Information Security Management System (ISMS)	Review Lecture Test / Assignment	3/3

	3. Information Security Policy, Standards and Procedures 4. Information Security Evaluation		
Lecture 9	Topic 8: Security Incident Response 1. What is Security Incident response 2. Computer Security Incident response team 3. Incident response exercise	Review Lecture Test / Assignment	3/3
Lecture 10	Topic 9: Information Security and Cryptography 1. Requirements for Secure Communication 2. What is Cryptography? 3. Classic Cryptography 4. Modern Cryptography Lesson	Review Lecture Test / Assignment	3/3
Lecture 11	Topic 10: Common Key Cryptography 1. Common Key Cryptography algorithms: DES, Triple DES, AES 2. Encryption modes	Review Lecture Test / Assignment	3/3
Lecture 12	Topic 11: Public Key Cryptography 1. Problems of Key distribution for Common Key Cryptography 2. What is Public Key Cryptography? 3. RSA 4. Hybrid encryption.	Review Lecture Test / Assignment	3/3
Lecture 13	Topic 12: Public Key Cryptography Exercise 1. Exercise of Public Key Cryptography 2. Exercise of Hybrid encryption	Review Lecture Test / Assignment	3/3
Lecture 14	Topic 13: Data Integrity and Digital Signature 1. Integrity of Data 2. Hash Function 3. Digital Signature 4. Exercise of Hash functions and Digital Signature.	Review Lecture Test / Assignment	3/3
Lecture 15	Topic 14: Public Key Certificate and PKI 1. Key Certificate: Digital Signature of Public Key 2. Public key Infrastructure (PKI) and Certificate Authority 3. Exercise on PKI Lesson 1	Review Lecture Test / Assignment	3/3
Lecture 16	Topic 15: Presentation and Discussion. Project	Review Lecture Test / Assignment	3/3
Lecture 17 10:00 28-05-2023 20:00 29-05-2023	Final Exam (40%)		90
Total			225

Recommended Materials

1. Algorithms to Live By: The Computer Science of Human Decisions. Author: Brian Christian and Tom Griffiths, 2022
2. Arlow, J. and Newstadt, I. UML 2 and the unified process: Practical object-oriented analysis and design (Addison-Wesley Longman), 2005
3. Chaos Monkeys: Obscene Fortune and Random Failure in Silicon Valley. Author: Antonio Garcia Martinez, 2022

4. Cult of The Dead Cow Joseph Menn, 2019
5. Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future. Author: Ashlee Vance, 2022
6. Ghost in the wires Kevin Mitnick, 2012
7. Hacking, The Art of Exploitation Jon Erickson, 2008
8. Pickard, A.J. (2007) Research methods in information (Facet Publishing)
9. Rosenfeld, L. and Morville, P. (2007) Information architecture for the World Wide Web (Sebastopol, O'Reilly)
10. The Art of Invisibility Kevin Mitnick, 2017
11. The Code Book Simon Singh, 2020
12. The Inevitable: Understanding the 12 Technological Forces That Will Shape Our Future. Author: Kevin Kelly, 2022
13. The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win. Author: Gene Kim, Kevin Behr, and George Spafford, 2022

** The above schedule and procedures are subject to change in the event of extenuating circumstances.*

Протокол засідання кафедр № 1 від 24.01.2023 року

Проректор з навчально-методичної роботи Л.І.Кондратенко

Завідувач кафедри Л.В.Жарова

Викладач Р.В.Сєлєзньова