UNIVERSITY of GUELPH

SCHOOL OF COMPUTER SCIENCE

SEMESTER:	FALL 2018	
COURSE:	**CIS*4510: COMPUTER SECURITY FOUNDATIONS**	
PREREQUISITES:	CIS*3210: Computer Networks	
PROF:	**Dr. Charlie Obimbo**	
LECTURES:	TTh 05:30PM - 7:00 PM.	MINS, Room 106
LABS:	TTh 09:30AM - 11:20AM	THRN, Room 2420
GRAD. TAs:	TBA	
CREDIT UNIT:	0.5 CREDIT HOURS	
OFFICE HOURS:	TUESDAYS 11AM – 1PM or by appointment **REYN 3310**	
CONTACTS:	**cobimbo@uoguelph.ca**	(519) 824-4120 x 52634
FINAL EXAM:	Thursday April 13, 2018 7 p.m. to 9 p.m.	

Calendar Description:

This course covers basic concepts and practices in computer and network security. This includes topics such as fundamental concepts of computer security, network security, threat landscape, threat intelligence and attack methods, ethical hacking concepts and other hacking techniques, security technology and security policies, and cloud security.

Course Learning Outcomes:

Upon successful completion of this course, students will be able to:

1. Identify computer and network security threats, classify the threats and develop a security model to prevent, detect and recover from the attacks.
2. Develop SSL or Firewall based solutions against security threats, employ access control techniques to the existing computer platforms such as Unix and Windows NT.
3. Download and install Pentest (for penetration testing and Ethical Hacking), and efficiently use the software to determine the vulnerabilities of a computer system.
4. Determine how to patch the vulnerabilities in #3.
5. Write an extensive analysis report on any existing security product or code, investigate the strong and weak points of the product or code.

Textbooks & Materials:

1. **Computer Security Fundamentals** 3rd Edition**,** William (Chuck) Easttom, II. (2016, Pearson Education Company), ISBN-10: 0-7897-5746-X
2. *Research resources:* e-Research Textbook- How to Build Skills in Research

Recommended Reference Material:

➢ NIST Cybersecurity Framework - https://www.nist.gov/sites/default/files/documents/cyberframework/cybersecurity-framework-021214.pdf

Detailed Course Description:
Topics covered will include:
- Introduction to Computer Security
- Networks and Internet
- Network Scanning & Vulnerability Scanning
- Next Generation Firewalls
- Intrusion Detection/Prevention Systems
- Cyber Stalking, Fraud, and Abuse
- Penetration Testing
- Denial of Service Attacks & Malware
- Industrial Espionage on Cyberspace
- Computer Security Software
- Security Policies
- Cyber Terrorism & Info-Warfare

Teaching methodology:

The course will be conducted through lectures and class discussions, illustrations using computers, and practical lab exercises. Lab-reports are due 1 week after the labs.

Class Policy:

- Mobile phones should be switched **OFF** during class session.

Course Evaluation:

Labs	10 %	[There will be 2 lab assessments October 2/4 and November 6/8]
Assignments	20 %	[2 Assignments, due October 9th and November 15th]
Presentations	10 %	[Group presentations: Week of October 23rd - November 1st]
Midterm	20 %	[October 18th]
Final Exam	40 %	[December 13th 7 p.m. to 9 p.m.]

To Pass this course, you need to do ALL assignments and the midterm, get not less than 50% on the assignments and not less than 50% in the Final Exam. A student who fails the course will receive a FINAL grade of not more than 45%.

If a student does ALL the assignments and achieves NOT LESS than 40% on each of them, and passes the Final Exam, then the one with the lower mark will count for 20% of the assignment marks and the higher one 80%.

Your final grade is the weighted sum of all assessments shown above unless you fail the final exam, in which case your final grade is calculated by

0.4(Labs + Assignments + Presentations) + Midterm + Final Exam,

Academic Misconduct

The University of Guelph takes a very serious view of Academic Misconduct. Included in this category are such activities as cheating on examinations, plagiarism, misrepresentation, and submitting the same material in two different courses without written permission. Students are

expected to be familiar with the section on Academic Misconduct in the Undergraduate Calendar, and should be aware that expulsion from the University is a possible penalty. If an instructor suspects that academic misconduct has occurred, that instructor has the right to examine students orally on the content or any other facet of submitted work. Moreover, it is expected that unless a student is explicitly given a collaborative project, all submitted work will have been done independently.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement due to illness or compassionate reasons, please advise the course instructor (or other designated person) in writing, with name, address and e-mail contact. Where possible, this should be done in advance of the missed work or event, but otherwise, just as soon as possible after the due date, and certainly no longer than one week later.

Note: if appropriate documentation of your inability to meet that in-course requirement is necessary, the course instructor, or delegate, will request it of you. Such documentation will rarely be required for course components representing less than 15% of the course grade.