University of Kentucky
School of Information Science (SIS)

[ICT 550-001][Security Informatics]
[Fall 2015/2015]
[August 26, 2015 – December 18, 2015]

Instructor

Sherali Zeadally
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Preferred method of contact: Email

Office Hours

- Tuesdays: 12.30 PM to 3 PM
  Thursdays: 12.30 PM to 3 PM
- How to contact me for an appointment:
  Email please
- Maximum time frame for response:
  Will respond as soon as possible
  Maximum: 12 hours any day of the week including weekends
- Office Hours:
  I am available anytime by email. I am also available in the office anytime if a prior arrangement is made

Class Information

- Lectures [Lucille Caudill Little Fine Arts Library, Room 312]
  Tuesdays: 3:30 PM – 4:45 PM
  Thursdays: 3:30 PM – 4:45 PM
- Final exam date and time
  December 15, 2015

COURSE INFORMATION

Course Description

ICT 550 Section 001 – Security Informatics

This course introduces students to policy concerns relating to security informatics, and highlights theoretical and practical approaches to designing secure Information and Communication Technology (ICT) systems. It addresses key issues such as authentication, risk analysis, access control, database and network security, and information assurance.

Course Objectives

- Explain the basic terminologies and definitions used in information security.
- Discuss the various types of attacks, attackers, and hardware/software defense solutions that can protect assets from attacks.
- Present access control fundamentals and authentication techniques.
- Explain the design, implementation of different types of security policies.
- Discuss network security solutions through network devices, technologies, and designs.
- Explain the fundamentals of security management (identity management, change management, etc.), security audit principles and practices, and procedures involved in handling security incidents.
- Discuss risk assessment methods and risk mitigation techniques.
- Provide strong hands-on practical skills and experience through various projects.

Required Reading

Lecture notes and peer-reviewed publications. Lecture materials will be provided to all students on a weekly basis throughout the semester.

Relevant reference textbooks

- M. Ciampa, Security + Security Guide to Network Security Fundamentals, 4th edition, ISBN-13: 978-1-111-64012-5.

- T. Howlett, Open Source Security Tools, ISBN 0-321-19443-8, Pearson Education Ltd.

STUDENT EVALUATION

Grading Parameters for Graduate Students

- 4 projects: 60%
- Midterm exam (20%) [covers the first half of the course]
- Final exam (20%) [covers the second half of the course] However, the instructor reserves the right to retest on material that was not appropriately understood. Such material will be highlighted before the final exam

Grading Parameters for Undergraduate Students

- 2 projects: 20%
- Hands-on labs: 30%
- 2 Homeworks: 10%
- Midterm exam (20%) [covers the first half of the course]
- Final exam (20%) [covers the second half of the course]

  However, the instructor reserves the right to retest on material that was not appropriately understood. Such material will be highlighted before the final exam

Grading Rubric (See Submission of Course Assignments for details)

- Late assignments are only acceptable under exceptional circumstances or if the instructor has been notified ahead of time. For all other cases, submissions handed in after the submission deadline will be assessed with a penalty of 5% per day.
- Submitted work which does not conform to the required standard (in terms of file format, line spacing, grammar, etc.) as set in the "Submission of Course Assignments" in this syllabus will be graded with points taken off accordingly.

Grading Scale for Graduate Students

[90% – 100%] = **A (Exceptional Achievement)**
[80% – 89%] = **B (High Achievement)**
[70% – 79%] = **C (Average Achievement)**
[0% – 69%] = **E (Failing)**

Grading Scale for Undergraduate Students

[90% – 100%] = **A (Exceptional Achievement)**
[80% – 89%] = **B (High Achievement)**
[70% – 79%] = **C (Average Achievement)**
[60% – 69%] = **D (Below Average Achievement)**
[0% – 59%] = **E (Failing)**

Absences/Attendance

The instructor's policies on academic integrity, excused absences, incompletes, and accommodations due to disability are described in the general course policies of SIS described at http://ci.uky.edu/lis/sites/default/files/policies.pdf

Submission of Course Assignments

- All assignments and project reports must be submitted electronically.
- All times specified for submission deadlines use Eastern Standard Time (**EST**).
- All submitted work must be typed [12 point, Time Roman, single line spacing, 1 inch margins] using **Microsoft WORD (.doc, .docx, .rtf)** and be thoroughly spellchecked and free of grammatical mistakes.
- All files submitted must have the following text "**firstname_lastname<day-month submitted>"** as part of the filename.
- All sources used during the preparation of all submitted works must be clearly identified in a separate list of ordered [e.g., [1], [2], [3], etc.] references (in a **Reference** section placed after the main document). These references must be cited within the text of the submission where appropriate.

Group Work and Collaboration

All assignments should be undertaken individually. For projects requiring group work, detailed instructions will be outlined in the project description. When group work is performed, each member of the group must state his/her contributions very clearly and all members of the group must agree on each member's contributions before the start of the project and inform the instructor (in writing) about the expected efforts of each member of the group.

TECHNOLOGY INFORMATION & RESOURCES

Distance Learning Students are expected to have a minimum level of technological acumen and the availability of technological resources. Students must have regular access a computer with a reliable Internet connection and audio capabilities. Internet Explorer 7 (IE) or Firefox 2.x are the recommended browsers for those using a Windows-based PC. Those using Firefox 3.x may encounter problems with assignment uploads. Those using an Apple computer with MAC OS X (10.5.x) may use Firefox 3.x or Safari 3.x.

Please be certain that your computer and/or browser allow you to view Adobe Reader documents (.pdf). Microsoft Office and other software products are free for students: http://www.uky.edu/ukat/techtips/faculty/software-downloads

As your instructor, I am your first go-to person for technology problems. If you need more immediate assistance, please contact UKIT.

Information Technology Customer Service Center (UKIT)
http://www.uky.edu/UKIT/; 859-218-4357

Library Services
Distance Learning Services
http://www.uky.edu/Libraries/DLLS

- Carla Cantagallo, DL Librarian
- Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828-0439 (option #6)
- Email: dllservice@email.uky.edu
- DL Interlibrary Loan Service: http://libraries.uky.edu/ILL

Course Reserves
http://infokat.uky.edu/vwebv/enterCourseReserve.do

GENERAL COURSE POLICIES

Policies concerning academic integrity, excused absences and academic accommodations due to disability are available online at:
http://ci.uky.edu/lis/sites/default/files/policies.pdf

Military Members and Veterans

We recognize the complexities of being a member of the military community and also a student. If you are a member of the military or a military veteran or dependent, please inform your instructor if you are in need of special accommodations. Drill schedules, calls to active duty, mandatory training exercises, complications with GI Bill disbursement, and other unforeseen

military and veteran related developments can complicate your academic life. If you are aware of a complication, we will work with you and put you in contact with university staff members who are trained to assist you. Please contact Tony Dotson, Coordinator of the University of Kentucky Veterans Resource Center at (859) 257-1148 for additional assistance. Visit http://www.uky.edu/veterans for more available resources.

COURSE CALENDAR

Graduate Students

Lecture Material, Projects, Exams	
Lecture Material	Posted ***weekly*** on blackboard
Hands-on Labs	Several distributed throughout the semester
Project 1	Due 3.30 PM on September 17, 2015
Project 2	Due 3.30 PM on October 22, 2015
Mid-term exam	**October 15, 2015**
Project 3	Due 3.30 PM on November 12, 2015
Project 4	Due 3.30 PM on December 3, 2015
Final exam	**December 15, 2015**

Undergraduate Students

Lecture Material, Projects, Hands-on Labs, Homeworks, Exams	
Lecture Material	Posted ***weekly*** on blackboard
Hands-on Labs	Several distributed throughout the semester
Homework 1	Due 3.30 PM on September 22, 2015
Project 1	Due 3.30 PM on October 6, 2015
Mid-term exam	**October 15, 2015**
Homework 2	Due 3.30 PM on November 10, 2015
Project 2	Due 3.30 PM on December 1, 2015
Final exam	**December 15, 2015**

NOTE: Please contact me as early as possible to make the appropriate arrangements in case you cannot take the quizzes or exams on the dates specified above.

Tentative topics to be covered in this course include:

Week 1	Information security terminologies, computer security laws
Week 2	
Week 3	Attackers and types of attacks
Week 4	Malware types
Week 5	Fundamental security principles
Week 6	Access control and authentication services
Week 7	
Week 8	**Mid-Term Exam**
Week 9	Network Security: firewalls, IDS, VLAN, DMZ, etc.
Week 10	Wireless security, mobile device security
Week 11	
Week 12	Security policy design and types of security policies
Week 13	Security management, Security audit principles and practices
Week 14	Risk assessment methods and Risk mitigation techniques
	Thanksgiving holidays [November 25-28, 2015]
Week 15	Business Continuity (BC)
Week 16	Vulnerability assessment: policies, procedures, tools
Week 17	**Final Exam**

Lecture notes cover important materials that need a thorough understanding by the students. Projects are expected to provide strong hands-on, practical security skills and experience. Midterm and final exams may be preceded by short reviews of the materials to be tested.

NOTE: This syllabus may be changed at any time at the discretion of the instructor.