**INFS 4391 – INFORMATION SECURITY**

Course : INFS 4391 Instructor Name: Dr. Jerald Hughes

Term : Spring 2020 Telephone #: 956-665-3353

Email: j.hughes@utrgv.edu Office location: MAGC 3.114 (E campus)

Meeting times: MW 1700-1815

**Course Description**

This course provides students with a balanced understanding of the technical and organizational issues related to Information Security. Students will receive theoretical and practical instructions in both technical and managerial aspects of securing information in organizations. Representative topics covered in the course include key topics such as Internet and network security, Encryption, Cryptography, Symmetric and Public Key algorithms, Digital signatures, Authentication, Key database security, secure communications and industry best practices for information assurance. The course will be helpful to the students who aim to pursue Certified Information Systems Security Professional certification and/or careers in Information Security.

**Textbook and Other Required Resources**

# Required: *CompTIA Security+ Guide to Network Security Fundamentals, 6th Edition*, Mark Ciampa, 2018, Cengage Learning,

ISBN-13: 978-1-337-28878-1 ISBN-10: 1-337-28878-0

**Learning Objectives**

* Students will learn the major concepts, frameworks, principles, and vocabulary involved in information security
* Students will learn how to assess basic endpoint, server, network, and data security
* Students will understand attacks against organizational information security, and how to defend
* Students will learn ethical principles in studying information security, and in using security tools
* Students will learn how to critically assess existing and new threats against information security
* Students will learn how to use basic security tools

**Add/Drop Policy**

A student with 2 or more unexcused absences may be dropped from the class.

**Robert C. Vackar College of Business and Entrepreneurship Learning Goals and Mission**

The Robert C. Vackar College of Business Entrepreneurship has adopted the following learning goals and objectives that each student should achieve while in the degree program. Not all goals and objectives are covered in each course; however, all goals and objectives should be addressed throughout the degree program.

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| **BBA Learning Goal** | **This course contributes to the following College of Business and Entrepreneurship learning goals:** | **How measured** |
| Demonstrate foundational knowledge of functional area concepts and theories. |  | Homeworks and exams |
| Demonstrate effective business communication skills. |  | Research paper |
| Apply sustainable practices (economic, social and ethical, and environmental) to business decision-making. |  | Homeworks and exams |
| Demonstrate an understanding of how globalization, including conditions on the US-Mexico border, shape effective business decision making. |  |  |
| Apply quantitative analytical skills to business decision-making. |  | Project, homeworks |
| Demonstrate the ability to critically analyze business issues. |  | Project, homeworks |
| **IS Major Learning Objectives** | **This course contributes to the following Department of Information learning objectives:** | **How measured** |
| Students will understand concepts needed to design and implement information systems infrastructure. | 🗹 | Homeworks, Project |
| Students will understand concepts needed to design and implement information systems infrastructure. | 🗹 | Homeworks, Project, Exams |
| Students will be able to design and implement information systems infrastructure. | 🗹 | Homeworks, Project |
| Students will be able to communicate effectively orally and in writing. | 🗹 | Project |

Our mission is to be the agent of innovation, knowledge discovery, and economic development in South Texas, Northern Mexico, and beyond, by offering a rigorous curriculum informed by experiential learning, high quality research, and community partnerships. Your mastery of these learning goals and objectives help us to achieve this mission.

**Assessment:** Students will demonstrate their command of factual knowledge and theoretical bases for information system security through their performance on occasional quizzes, a midterm exam, a research paper and a final exam. Students will demonstrate their practical command of the application of information systems security through their completion of homeworks as listed below in the course schedule. Exams will be comprehensive. All material from the assigned portions of the texts may appear on exams. Anything mentioned in class lectures may appear on exams.

**Grades:** Homeworks – 50%, Research Paper: 15%, Midterm – 15%, Final Exam – 20%

**In order to receive credit toward your INFS B.B.A. degree, you must earn a C or better for this course.**

**Homeworks:** Instructions on how to complete your homeworks will be provided. Homeworks which fail to correctly implement the assigned elements will be corrected by the student and resubmitted. Your final homework grade will be the average of all the homework assignments equally weighted.

**Class Project:** During the semester, students will work in 3-student teams to produce a 10-15 page research paper on a new or emerging threat to information system security. Research the threat, explain how it works, identify source(s) of the threat, identify the vulnerability(ies) they are exploiting, discuss observed instances of the attack being carried out, detail the expected impact(s) of a successful attack, describe 1) technological responses to the threat, 2) business impacts, 3) managerial/policy responses to the threat, 4) legal/compliance / ethical issues raised by the threat. USE published sources. CITE your sources properly. Write a correct REFERENCES section at the end of the paper, using APA style citations. At the end of the semester, all students will give a short (5 min.) presentation on their paper’s content, using Powerpoint or the equivalent.

**Class Policies:** Class starts promptly at 5:00 PM, at which time students are to be seated and ready to begin.

Attendance will be taken at the beginning of class. Students not responding to the roll at this time will be marked absent. Students who leave class early without prior permission from the instructor will be marked absent.

Students are responsible for all materials discussed during days on which they may be absent, so arrange with another student to get the notes from any sessions you miss.

If you cannot be present on the scheduled dates for the Midterm or Final exams, you must make arrangements with the professor beforehand. No make-up exams will be given.

Turn off all cellphones before class begins. Do not talk during lectures; raise your hand if there is something you do not understand.

Students are responsible for knowing all material in the assigned portions of the texts. Reading assignments are given in the course schedule; students are expected to attend class having already read the material for that session.

## You should take extensive notes on the materials presented in class for your own study purposes.

**Group Project Grades**

* Each group receives a single grade for a group project or term paper.
* Each group member in a group is expected to contribute equally to the group project and term paper.
* Each team will generate a collaborative agreement specifying the requirements for fair participation on the team. Any difficulties which may arise must be brought to the instructor’s attention before the end of classes.

Calendar of Activities

Some important dates for spring 2020 include:

January 13 First day of classes

January 16 Last day to add a course or register for Spring 2020

January 20 Martin Luther King Jr. Holiday – NO classes

March 9-14 Spring Break – NO classes

April 9 Last day to drop a course; will count toward the 6-drop rule

April 10-11 Easter Holiday – NO classes

April 30 Study Day – NO classes

May 1-7 Final Exams

May 7 Spring classes end; Official last day of the term

May 8-9 Commencement Exercises

**UTRGV Policy Statements**

**STUDENTS WITH DISABILITIES:** Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact **Student Accessibility Services (SAS)** for additional information. In order for accommodation requests to be considered for approval, the student is responsible for providing sufficient documentation of the disability to SAS and participating in an interactive discussion with SAS staff. Accommodations may be requested at any time but are not retroactive. Please contact SAS early in the semester/module for guidance. Students who experience a broken bone, severe injury, or undergo surgery may also be eligible for temporary accommodations.

**Pregnancy, Pregnancy-related, and Parenting Accommodations:** Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to contact Student Accessibility Services for additional information and to request accommodations.

**Student Accessibility Services: Brownsville Campus**: Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at [ability@utrgv.edu](mailto:ability@utrgv.edu).

**Edinburg Campus:** Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at [ability@utrgv.edu](mailto:ability@utrgv.edu).

**MANDATORY COURSE EVALUATION PERIOD:** Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (<http://my.utrgv.edu>); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about: April 10-29, 2020

**ATTENDANCE:** Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

**SCHOLASTIC DISHONESTY:** As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism (including self-plagiarism), and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations, STU 02-100, and UTRGV Academic Integrity Guidelines). **All scholastic dishonesty incidents will be reported to Student Rights and Responsibilities.**

**SEXUAL MISCONDUCT and MANDATORY REPORTING:**  In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity ([oie@utrgv.edu](mailto:oie@utrgv.edu)) any instance, occurring during a student’s time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and sexual harassment, about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at [www.utrgv.edu/equity](https://nam01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.utrgv.edu%2Fequity&data=02%7C01%7Cmarissa.alaniz%40utrgv.edu%7Ccdba6e51db19402b2a0f08d7062784d4%7C990436a687df491c91249afa91f88827%7C0%7C0%7C636984639122459545&sdata=5hndVru5iLHMQARX2XhtCu41F8pbn0A6sKxkK1lXYss%3D&reserved=0), including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at (956) 665-8287, (956) 882-8282, or [OVAVP@utrgv.edu](mailto:OVAVP@utrgv.edu).

**COURSE DROPS:** According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

**STUDENT SERVICES:** Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email ([ucentral@utrgv.edu](mailto:ucentral@utrgv.edu)) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor’s office hours. University Resources include the Advising Center, Career Center, Counseling Center, Learning Center, and Writing Center. The centers provide services such as tutoring, writing help, counseling services, critical thinking, study skills, degree planning, and student employment. In addition, services such as the Food Pantry are also provided. Locations are listed below.

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| **Center Name** | **Brownsville Campus** | **Edinburg Campus** |
| **Advising Center**  [AcademicAdvising@utrgv.edu](mailto:AcademicAdvising@utrgv.edu) | BMAIN 1.400  (956) 665-7120 | ESWKH 101  (956) 665-7120 |
| **Career Center**  [CareerCenter@utrgv.edu](mailto:CareerCenter@utrgv.edu) | BCRTZ 129  (956) 882-5627 | ESSBL 2.101  (956) 665-2243 |
| **Counseling Center**  [Counseling@utrgv.edu](mailto:Counseling@utrgv.edu)  [Counseling and Related Services List](https://www.utrgv.edu/facultysuccess/_files/documents/syllabus-statement-for-counseling-12-16-19.pdf) | BSTUN 2.10  (956) 882-3897 | EUCTR 109  (956) 665-2574 |
| **Food Pantry**  [FoodPantry@utrgv.edu](mailto:FoodPantry@utrgv.edu) | BCAVL 101 & 102  (956) 882-7126 | EUCTR 114 (956) 665-3663 |
| **Learning Center**  [LearningCenter@utrgv.edu](mailto:LearningCenter@utrgv.edu) | BMSLC 2.118  (956) 882-8208 | ELCTR 100  (956) 665-2585 |
| **Writing Center**  [WC@utrgv.edu](mailto:WC@utrgv.edu) | BUBLB 3.206  (956) 882-7065 | ESTAC 3.119  (956) 665-2538 |

## COURSE SCHEDULE

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| **Class** | **Topics** | **Homeworks** |
| Week 1 | Introduction to Information Security - Ch. 1  Course content and procedures  Lab / online resources  Assemble Teams | Windows Security Center report  Develop InfoSec Ethics statement (teams)  Develop teamwork agreement (teams) |
| Week 2 | Information Security Principles and Frameworks - Ch. 1 continued | ShieldsUP firewall scan  Malicious Software Remover scan |
| Week 3 | Security Threats – Ch. 2  Hackers and Hacking | Application vulnerabilities Secunia scan  netstat Process ID scan |
| Week 4 | Security Threats – Ch. 2  Application and Network Attacks | Accounts management exercise  Data Execution Protection exercise |
| Week 5 | Host, Application and Data Security - Ch. 9 | Firewall settings and exceptions  **---Paper Topics Due---** |
| Week 6 | Network Security - Ch. 5 - 7 | Logon events auditing project |
| Week 7 | Network Security - Ch. 5 - 7 | Using Wireshark – packet sniffing |
| Week 8 | Network Security - Ch. 5 - 7 | MAC spoofing exercise  ---**Paper research sources listing due---** |
| Week 9 | **MIDTERM EXAM –**  Google Hacking |  |
| Week 10 | Wireless Network Security - Ch. 8 | Wardriving exercise  ---**Paper Abstract and outline due---** |
| Week 11 | Mobile Device Security – Ch 10 |  |
| Week 12 | Access Control - Ch. 11 | File Integrity check with Hash |
| Week 12 | Authentication and Account Management - Ch. 12 | Hash uniqueness demonstration  ---**Paper first draft due---** |
| Week 13 | Cryptography - Ch. 3 - 4 | Secure FTP exercise |
| Week 14 | Cryptography - Ch. 3 - 4 | PGP public/private keys |
| Week 15 | Student presentations  Review for Final Exam | **---Research Papers Due---** |

*The schedule above is tentative and subject to revision.*