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**College of Engineering and Computer Science**

*Dr. John Abraham, Professor*

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| Instructor Name: **Dr. john p. abraham**Term: **summer 2021** Telephone Number: **956-665-3550**Email: **john.abraham@utrgv.edu**Meeting Times and Location: Join URL: <https://utrgv.zoom.us/j/86971735260> Office Location: EIEAB 3.243 (New Eng Bldg in Edinburg) Office Hours: **everyday before and after classes. please email for appointment.** |

**Course Description and Prerequisites**

In‐depth study of theory, design, implementation and performance of computer and communications networks. Current network types, including point‐to‐point, satellite, packet switch, local area and wide area networks, are studied, as well as evolving technologies such as ATM. Provides an introduction to queuing analysis and includes network programming projects.

In addition, students will gain practical experience in setting up communication between computers, networking, and network management. Students will set up servers and clients and create communication between them, setup rights and privileges, create backups, analyze packets, and setup virtual machines.

**Welcome Statement.**

**I want to make sure this course provides you an absolute positive experience. During our first meeting make sure to get acquainted with other students and obtain contact information from several. You will need help each other.**

**Teaching Philosophy**

**Please note that Computer networking is quite different than most other courses you have taken. There are many ways to accomplish a task. I do not teach you the steps needed to get something done. My instructions to you may look sparse; please be assured it is intentional. That is the only way you are going to learn networking. You probably will have to do lots of attempts before getting intended result. Do not get frustrated. I get many positive comments from students who completed the course successfully. Several of them have landed good jobs in the area of network administration. Rarely one or two students repeat the course mostly because they did not do the assignments on time due to time conflicts with work and other courses. All assignments should be done by each student and may not copy from someone else or the Web. However, you can work with others or check the Web to learn the concepts.**

**Expected Background:**

 **Students are expected to be able to program in C or ++, C#, VB, Python or Java. Students who are not fluent in these topics should make up the deficiencies by homework and programming exercises.**

**System Requirements:**

You will need a computer that can handle VIRTUAL MACHINES, one Linux and one Microsoft Windows based servers and one or two clients. For practical projects students may need to obtain either hardware or software.

**Learning Objectives/Outcomes for the Course**

Upon conclusion of this course a student will be able to plan and install a TCP/IP protocol stack based local area network, set up switches and routers, and write socket programs for communication.

**Learning outcomes:**

* 1. Compare and contrast the OSI and TCP/IP models.
	2. Create virtual servers and workstations
	3. Configure servers, switches and routers.
	4. Create subnets and supernets.
	5. Create routing tables.
	6. Setup static IP address as well as DHCP based scopes.
	7. Setup a DNS and manipulate MX and A records
	8. Setup a wireless network
	9. Install appropriate network security
	10. Write socket programs

The following exercises will need to be completed to accomplish these learning outcomes. Dates below are tentative. Please check blackboard for due dates.

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| Download and install VirtualBox (or your choice), Install Linux. Install your printer and make sure printers work from both the host and Linux.  | 7/8/2021 |
| Share files between Linux and your host machine (both direction). Install SAMBA | 7/11/2021 |
| Install Windows Professional 7 or above in another virtual machine use command-line NET commands to accomplish the task | 7/14/2021 |
| Socket Programming – chat program |  |
| Install Windows Server and create a Domain. Join the windows 7 or later to the domain |  |
| Ethical Hacking using Kali Linux |  |
| Exam 1 – Please be working on the next lab |  |
| Create security groups with different rights and assign users to them |  |
| Router Configuration using CISCO Packet Tracer |  |
| Tools: Task Manager, RegEdit, Computer Management |  |
| Windows Server Group Policy |  |
| Packet Analyzer |  |
| Create automatic backups using windows server built in software (if time permits)Setup VPN (if time permits) |  |

13. Create automatic backups using windows server built in software (if time permits)

14. setup VPN (if time permits)

**Grading Policies**

90 or above A

80 or above B

70 or above C

Less than 70 F.

You need to maintain a B average in the graduate program.

Grading:

Midterm and Final Exams 60%

Practical portion (labs), programming 30%

 Attendance and other assignments 10%

General instructions about programming and lab assignments: You may choose any of the following languages: C, C++, C#, Java, Visual Basic, or Python. If you would like to use another language please talk with me first. I will not give you any assistance with the programming assignments. You are welcome to talk with others in the class to get general ideas and algorithms, but may not view their source codes.

Assignments are due on dates specified in the Blackboard. Late penalties: 1 day=10%, 2 days=20%, 1 week=30%, after one week I do not accept assignments (no exceptions).

Generally, there will be two lab assignments per week. Each assignment is built upon the previous assignments. Therefore, do not get behind in your lab assignments. Here are some sample assignments, you may want to do them as early as possible. I reserve the right to ask questions on the test from the lab assignments. **For all assignments, please submit in one word document with all screen captures pasted in it with comments for each screen capture. All assignments should be done by each student and may not copy from someone else or the Web. However, you can work with others or check the Web to learn the concepts. Plagiarism can lead to dismissal from the class and/or from the University.**

**NOTICE:** Your enrollment in this course requires that you use Respondus Lockdown Browser and Respondus Monitor for online assessment proctoring. LockDown Browser is a custom browser that locks down the testing environment within Blackboard and replaces regular browsers such as Chrome, Firefox, and Safari. Respondus Monitor requires you to have a webcam and microphone as it will record you while taking your assessment. **YOUR ACTIVITIES ARE RECORDED WHILE YOU ARE LOGGED INTO OR TAKING YOUR ASSESSMENT(S).  THE RECORDINGS SERVE AS A PROCTOR AND WILL BE REVIEWED AND USED IN AN EFFORT TO MAINTAIN ACADEMIC INTEGRITY.**

You can find more detailed information on Lockdown Browser and Monitor at [UTRGV.edu/online](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.utrgv.edu%2Fonline%2Fgetting-support%2Fstudent-support%2Frespondus%2Findex.htm&data=02%7C01%7Cpriscilla.lozano%40utrgv.edu%7C6e38d72002b74279921d08d7df9e3c2c%7C990436a687df491c91249afa91f88827%7C0%7C0%7C637223743015282674&sdata=lE6Dcm7gfPcp7rp86Xm5vTjmjTZ1CJCAxSfY6mJ7F7A%3D&reserved=0).

**Textbook and/or Resource Material**

**Required Textbook**: Comer, Douglas E., Computer Networks and Internets, 6th Edition, Prentice Hall, 2015.

ISBN-10: 0133587932 **(**ISBN-13: 978-0133587937**)**

**Please take good notes as I cover a great deal more than in the textbook.**

Be sure to include important dates relative to the academic calendar. The UTRGV academic calendar can be found at <https://my.utrgv.edu/home> at the bottom of the screen, *prior to login*. Some important dates for Summer II include:

July 8 First day of classes

July9 Last day to add a class or register for Summer II classes

Aug 4 Last day to withdraw

Aug12 Study Day – NO classes

July 13 Final Exams; Official last day of the Summer II term

Aug 16 Grades Due at 3 p.m.

**Other Course Information**

In this section, please provide any other information that is pertinent to your course and your expectations for students.

**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 whoexperiencea 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.

**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.

**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.

**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) 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.

**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) 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 | BMAIN 1.400(956) 665-7120 | ESWKH 101(956) 665-7120 |
| **Career Center**CareerCenter@utrgv.edu | BCRTZ 129(956) 882-5627 | ESSBL 2.101(956) 665-2243 |
| **Counseling Center**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 | BCAVL 101 & 102(956) 882-7126 | EUCTR 114(956) 665-3663 |
| **Learning Center**LearningCenter@utrgv.edu | BMSLC 2.118(956) 882-8208 | ELCTR 100(956) 665-2585 |
| **Writing Center**WC@utrgv.edu | BUBLB 3.206(956) 882-7065 | ESTAC 3.119(956) 665-2538 |