**UTRGV logo**

**CSCI 6345.90L:Advanced Computer Networking**

**SYLLABUS**

**Spring 2021**

*Subject to any new Texas legislative mandate changes.*

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| **Course Information:**  Meeting times: Thursdays 6:30 to 9 pm  Meeting location Please enter blackboard, choose this course, then click on zoom classroom.  **Course Modality:** Online Synchronous Courses (OSYNC). Synchronous learning occurs on set schedules and time frames. Students and instructors are online at the same time since lectures, discussions, and presentations take place at specific hours. All students must be online at that exact time in order to participate in the class. |
| **Instructor Information:**  **Instructor Name: Dr. John P. Abraham**  Phone: (956) 665-3550 E-Mail: [john.abraham@utrgv.edu](mailto:john.abraham@utrgv.edu)  **Office location: EIEAB 3.243 (New Eng Bldg in Edinburg) Office hours:**Will open zoom 30 minutes before class time, if you need to speak with me, you can do it then or at the end of the class. Both the TA and I will be available all the time through emails.  We can create a new zoom link, if you want to speak privately. |

**Important: This syllabus is under revision, final syllabus will be posted on the first day of the class.**

**My Schedule**

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| **CSCI 4303.90L**  Computer Architecture  Jan 11,2021 to May 6, 2021 | **TTh 11 am to 12:15pm**  This will be zoom administered class at a specified time. Attendance required. |  |  |
| **CSCI 6345.90L**  Ecommerce Implementation | **Thursdays 6:30 to 9 pm**  This will be zoom administered class at a specified time. Attendance required. |  |  |
|  |  |  |  |
| **Office Hours** | **Will open zoom 30 minutes before class time, if you need to speak with me, you can do it then or at the end of the class.** |  |  |
|  | **TA: TBA** |  |  |

**Welcome & Introduction to COURSE MODALITY**

**Online Synchronous Courses:**These courses will be delivered fully online. There will be a designated class meeting time for real-time instructor/student interaction, which will be conducted remotely via online platforms from the safety of your home. This real-time interaction may be supplemented by the digital presentation of course content.  Your instructors will provide you with feedback on assigned work, communicate with you electronically, and be available to meet with you as defined on this syllabus.  <https://utrgv.zoom.us/j/89774273548>

Course Description, Prerequisites & MODE OF LEARNING: **Catalog Description**: 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** to this, 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.

**A note to my students:** 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. 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.

COVID-19 RESOURCES**:**

Please visit the [UTRGV COVID-19 Website](https://www.utrgv.edu/coronavirus/index.htm) via the following link for the most up-to-date information and resources (<https://www.utrgv.edu/coronavirus/index.htm>).  This includes information on self-screening questions, links to forms for travel and contact, etc.

Face Covering [Protocol](https://www.utrgv.edu/coronavirus/updates/2020-05-29/index.htm)**:**

As part of the university’s ongoing COVID-19 mitigation efforts to maintain a healthy environment for all members of our campus community, anyone entering a campus building must wear a face covering that covers the mouth and nose. The covering must be worn in all hallways, public spaces, research labs, teaching/computer labs, libraries, classrooms, automobiles with a passenger, stairwells, elevators and common areas, as well as office spaces. In office spaces, when social distancing of 6 feet is possible and maintained, face coverings may be removed. Face coverings also are required in outdoor settings when safe social distancing and gathering practices are not possible.

**Textbooks:**

**Required**: 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.**

**Reference books:**

* Behrouz A. Forouzan, TCP/IP Protocol Suite, 4th Ed., McGraw Hill, 2010. ISBN 978-0-07-337604-2
* Lin, Hwang,and Baker. Computer Networks an Open Source Approach, 2012. ISBN 978-007-337624-0
* William Stallings, Data and Computer Communications 10th Edition, 2013, ISBN 0133506487 Pearson.
* *UNIX Network Programming* by W. Richard Stevens, Prentice Hall, 1990

**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.

**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.

**COURSE OBJECTIVES**: 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

**Assignments (lab and programming):**

General instructions about programming: 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 as specified in the Blackboard. Late penalties: 1 day=10%, 2 days=20%, 1 week=30%, 2 weeks=50%, after two weeks I do not accept assignments (no exceptions). Generally, there will be one lab assignment 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.** Midterm and Final Exams 60%, Practical portion (labs) or programming 30% , Attendance and other assignments 5%, Online multiple choices quizzes (groups of 4) 5% (submit average of multiple online quizzes)

**Important Notice about taking exams:**

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](https://www.utrgv.edu/online/getting-support/student-support/respondus/index.htm) 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).

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; have been provided such an accommodation by Student Accessibility Services (SAS); 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. With students’ permission, **I will record the lectures and post them** in Blackboard; however, **I will need everyone acknowledge permission through an email to me.**  *The use of recordings will enable you to have access to class lectures, group discussions, etc. in the event you have to miss a synchronous or face to face class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA), UTRGV’s acceptable-use policy, and UTRGV HOP Policy STU 02-100 Student Conduct and Discipline. A recording of class sessions will be kept and stored by UTRGV, in accordance with FERPA and UTRGV policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session.*

**Blackboard Support**

If you need assistance with course technology at any time, please contact the [Center for Online Learning and Teaching Technology](https://www.utrgv.edu/online/) (COLTT).

| **Campus:** | **Brownsville** | **Edinburg** |
| --- | --- | --- |
| **Location:** | Casa Bella (BCASA) 613 | Education Complex (EEDUC) 2.202 |
| **Phone:** | 956-882-6792 | 956-665-5327 |

**Toll Free: 1-866-654-4555**

Office Hours: Monday - Friday, 7:30 a.m. - 6:00 p.m.  
Support Tickets Submit a Support Case via our [Ask COLTT Portal](https://utrgv.edu/coltthelp)

**24/7 Blackboard Support**

Need Blackboard assistance after hours? You can call our main office numbers, 956-882-6792 or 956-665-5327, to speak with a support representative.

**Makeup Work:**Additionally, if work can be made up, what mechanisms have you set up to help students keep up with coursework in the event they have to miss class? Will you have recordings of all class meetings available? Will on-line quizzes/examinations be available?

Should you elect to record your instruction, sample syllabus language is included here:

*The use of recordings will enable you to have access to class lectures, group discussions, etc. in the event you have to miss a synchronous or face to face class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA), UTRGV’s acceptable-use policy, and UTRGV HOP Policy STU 02-100 Student Conduct and Discipline. A recording of class sessions will be kept and stored by UTRGV, in accordance with FERPA and UTRGV policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session.****You may not share recordings outside of this course.****Doing so may result in disciplinary action under UTRGV HOP Policy STU 02-100 Student Conduct and Discipline.*

ACADEMIC INTEGRITY:

Members of the UTRGV community uphold the [Vaquero Honor Code](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.utrgv.edu%2Fstudentlife%2Fabout%2Fvaquero-honor-code%2Findex.htm&data=02%7C01%7Cdavid.granado%40utrgv.edu%7C2b62b139d6dd4e81de4208d83567012f%7C990436a687df491c91249afa91f88827%7C0%7C0%7C637318063815870808&sdata=u3JK2q8UqFwgzYkzXZWeIRM%2FuNsVreezdMT5ZQr8tdE%3D&reserved=0)’s  shared values of honesty, integrity and mutual respect in our interactions and relationships.  In this regard, academic integrity is fundamental in our actions, as any act of dishonesty conflicts as much with academic achievement as with the values of honesty and integrity.  Violations of academic integrity include, but are 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 (Board of Regents Rules and Regulations, STU 02-100, and UTRGV Academic Integrity Guidelines).  **All violations of Academic Integrity will be reported to Student Rights and Responsibilities through**[**Vaqueros Report It**](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.utrgv.edu%2Fen-us%2Fstudent-experience%2Freport-it%2F&data=02%7C01%7Cdavid.granado%40utrgv.edu%7C2b62b139d6dd4e81de4208d83567012f%7C990436a687df491c91249afa91f88827%7C0%7C0%7C637318063815880802&sdata=AxekhYtwdB%2Baey6EThon1hqp19tXWY7HmAdrWDFIELA%3D&reserved=0)**.**

STUDENTS WITH DISABILITIES:

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive reasonable academic accommodations should contact **Student Accessibility Services (SAS)**for additional information.  In order for accommodation requests to be considered for approval, the student must apply using the *mySAS* portal located at [www.utrgv.edu/mySAS](https://nam01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.utrgv.edu%2FmySAS&data=02%7C01%7Cdavid.granado%40utrgv.edu%7C47dbf090677947b5e67e08d83305c9e4%7C990436a687df491c91249afa91f88827%7C0%7C0%7C637315447247309796&sdata=k%2FZq6WdNnZPfJN1x0egJQ9q0AMN%2Fd0pCtmNuRhnMy2g%3D&reserved=0) and is responsible for providing sufficient documentation of the disability to SAS. Students are required to participate in an interactive discussion, or an intake appointment, with SAS staff. Accommodations may be requested at any time but are not retroactive, meaning they are valid once approved by SAS. 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 apply to **Student Accessibility Services** using the following link: [Pregnancy Accommodations Request Form](https://cm.maxient.com/reportingform.php?UnivofTexasRGV&layout_id=22) [https://www.utrgv.edu/pregnancy](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.utrgv.edu%2Fpregnancy&data=02%7C01%7Cdavid.granado%40utrgv.edu%7C47dbf090677947b5e67e08d83305c9e4%7C990436a687df491c91249afa91f88827%7C0%7C0%7C637315447247309796&sdata=W%2BBV%2Bu2W%2FFo292T1PTZEqwcRWBp0bxcCT4YD1N07Mvg%3D&reserved=0)

**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](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.

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 (OIED@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%7Cdavid.granado%40utrgv.edu%7C3d4a82332e444b8e606d08d834d42073%7C990436a687df491c91249afa91f88827%7C0%7C0%7C637317432985425767&sdata=jCnOqfBL3vxfYuvYF3qtjVy4tmK9o9m%2FBghvXKfL%2FN4%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 (drop) 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 Student 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.

| **Center Name** | **Brownsville Campus** | **Edinburg Campus** |
| --- | --- | --- |
| **Advising Center**  [AcademicAdvising@utrgv.edu](mailto:AcademicAdvising@utrgv.edu) | BMAIN 1.400  (956) 665-7120 | ESWKH 101A  (956) 665-7120 |
| **Career Center**  [CareerCenter@utrgv.edu](mailto:CareerCenter@utrgv.edu) | BINAB 1.105  (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 |

**Calendar of Activities  - Please follow Blackboard deadlines.**

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 Spring 2021 include:

Spring 2021 Term (January 11 – May 6)

Oct. 26 (Mon.) Registration Begins Jan. 6 (Wed.) Payment Due Last day to join a waitlist

Jan. 8 (Fri.) Last day to withdraw (drop all classes) and receive a 100% refund

Jan. 11 (Mon.) Spring classes begin

Jan. 17 (Sun.) Last day to add or register for Spring classes

Jan. 15 (Fri.) Last day to withdraw (drop all classes) and receive an 80% refund

Jan. 18 (Mon.) Martin Luther King Jr. Holiday. No classes.

Jan. 25 (Mon.) Last day to withdraw (drop all classes) and receive a 70% refund

Jan. 27 (Wed.) Census Day (last day to drop without it appearing on the transcript)

Feb. 1 (Mon.) Last day to withdraw (drop all classes) and receive a 50% refund

Feb. 8 (Mon.) Last day to withdraw (drop all Spring classes) and receive a 25% refund

Mar. 15-20 (Mon.-Sat) Spring Break. No classes.

Apr. 2-3 (Fri.-Sat) Easter Holiday. No classes.

Apr. 6 (Tue.) Last day to drop a class (grade of DR) or withdraw (grade of W)

Apr. 29 (Thurs.) Study Day. No classes.

Apr 30-May 6 (Fri.-Thurs.) Final Exams May 6 (Thurs.) Spring classes end; Official last day of the term May 7-8 (Fri.-Sat.) Commencement Exercises May 10 (Mon.) Grades Due at 3 p.m.