

**CIS 3348-115, CRN 60109, Networking Architecture
Summer 2018
Texas A&M University-Central Texas**

Instructor: Dinesh Reddy, Ph.D.

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Office Hours: MW 10 am to 11 am (or by appointment)

Mode of instruction and course access:

This course meets face-to-face, (with supplemental materials made available online).

This course uses the A&M-Central Texas Canvas Learning Management System [<https://tamuct.instructure.com>].

I use Canvas to post course content, assignments, quizzes, exams, and to communicate any other announcements with the class.

Student-instructor interaction:

You may ask questions during class hours or office hours. Outside the class hours, you may email me with your questions anytime as you would by attending the class and coming into my office. Your questions will be answered within 24 hours on weekdays and within 48 hours on weekends and holidays.

911 Cellular:

Emergency Warning System for Texas A&M University-Central Texas

911Cellular is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in 911Cellular through their myCT email account.

Connect at [911Cellular](https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management) [<https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management>] to change where you receive your alerts or to opt out. By staying enrolled in 911Cellular, university officials can quickly pass on safety-related information, regardless of your location.

COURSE INFORMATION

Course Overview and description:

A study of network architecture, industry standards and communications protocols, the placement of networking devices and components, transmission media selection, logical and physical topologies, data transmission, and structured cabling for local area networks (LANs) and wide area networks (WANs). Network designs will include required components and address services as specified in an industry specific Request for proposal (RFP). Application exercises will include preparing and presenting a design proposal in response to an RFP and installation, configuration, testing and troubleshooting of WAN/LAN wiring interface technologies.

Course Objectives:

- Describe the network analysis, architecture, and design processes.
- Identify network analysis, architecture, and design process components.
- Describe the tactical and strategic significance of network analysis, architecture, and design.
- Describe the analysis requirements.
- Identify the network analysis process.
- Identify and characterize traffic flows.
- Discuss the relationship between and within network components.
- Demonstrate proficiency in IP addressing and routing.
- Describe network management and methodologies.
- Describe network performance.
- Identify mechanisms used to achieve optimal network performance.
- Identify the various security mechanisms required in networks.
- Determine the relationship between security mechanisms and network architecture.
- Conduct research
- Demonstrate proficiency in network design processes.

Required Reading and Textbook(s):

Computer Networks: A Systems Approach: 5th edition.

Authors: Larry Peterson, Bruce Davie.

Reference Guide (Optional Reading)

Computer Networking: A Top Down Approach: 6th Edition

Authors: James Kurose, Keith Ross

Additional required readings and optional readings will be posted on Canvas.

COURSE REQUIREMENTS

Exams

There will be two exams (one mid-term and one final). Each exam is worth 200 points. Final exam will not be comprehensive. The exams can be conducted either paper-based or on

canvas. Exams will be based on the textbook, readings, and class discussions. It is assumed that you will read the assigned chapters and readings in advance. Make up exams are not typically given. The only acceptable excuses for missing an exam are circumstances clearly outside your control, such as illness, death in family, etc. If you miss an exam, notify me as soon as possible. I may require documentation of the circumstances.

Assignments

There will be five assignments during the semester. Each assignment is worth 60 points. Assignments stress critical thinking by applying concepts learned in this course. Occasionally, some individual outside research will also be required. Assignments must be submitted before the end of the day (11:59 PM) on the due date mentioned in the course schedule. Late submissions will not be accepted for full points and will attract 20% deduction. Please do not email the assignment. Submission requirements will be mentioned in the assignment posting on Canvas.

Quizzes

There will be five quizzes (multiple choice) that are designed to test the general understanding of the topics covered in the course. The quizzes can be conducted either in-class or online through Canvas. Each quiz is worth 40 points.

Presentation

Each student will need to present (either individual or in a group) a topic on Data Communications in the class. The details of the presentation topic and grading rubric for the class presentation will be announced in the class. Presentation is worth 100 points.

Grading Criteria Rubric and Conversion

Your semester grade will be based on the following criteria:

| Course Requirement | Points | Weightage |
|-----------------------------------|---------------|------------------|
| Two exams (200 points each) | 400 | 40% |
| Five assignments (60 points each) | 300 | 30% |
| Five Quizzes (40 points each) | 200 | 20% |
| Presentation | 100 | 10% |
| Total | 1000 | 100% |

Final letter grade distribution will be as per the following scale:

| | |
|-----------|---------------|
| A | 94% and above |
| A- | 90% - 93% |
| B+ | 87% - 89% |
| B | 84% – 86% |
| B- | 80% - 83% |
| C+ | 77% - 79% |
| C | 74% – 76% |
| C- | 70% - 73% |
| D+ | 67% - 69% |
| D | 64% - 66% |
| D- | 60% - 63% |
| F | Below 60% |

Posting of Grades

All students' grade will be posted on the Canvas Grade book, and students can monitor their progress on Canvas grade book. Students can expect to see their grades within two weeks of the closing of class tests, exams, and assignments. Students are expected to visit Canvas course webpage regularly to get any update regarding this course.

COURSE OUTLINE AND CALENDAR

Course Schedule* ** (* This schedule provides a general plan. Deviations may be necessary)
(** Readings for each week will be posted on Canvas)

| Week | Dates | Course Topic | Due |
|------|-------|---------------------------------------------------|-------------------|
| 1 | 06/04 | Syllabus / Course Introduction / Ch 1 Foundation | |
| | 06/06 | Ch 1 – Foundation Continued | Quiz 1 |
| 2 | 06/11 | Ch 2 – Getting Connected | |
| | 06/13 | Ch 2 – Continued | Quiz 2 |
| 3 | 06/18 | Ch 3 – Internetworking | Assignments 1 & 2 |
| | 06/20 | Ch 3 - Continued | Quiz 3 |
| 4 | 06/25 | Ch 4 – Advanced Internetworking | Assignment 3 |
| | 06/27 | MID-TERM EXAM | |
| 5 | 07/02 | Ch 5 – End-to-End Protocols | |
| | 07/04 | Ch 6 – Congestion Control and Resource Allocation | Quiz 4 |
| 6 | 07/09 | Ch 6 – Continued | Assignment 4 |
| | 07/11 | Ch 7 – End-to-End Data | Quiz 5 |
| 7 | 07/16 | Student Presentations | Assignment 5 |
| | 07/18 | Course Review | |
| 8 | 07/23 | FINAL EXAM | |

Important University Dates:

June 2018

- **Fri, 1st** | Minimester ends
- **Fri, 1st** | Priority Deadline to Submit Graduation Application
- **Fri, 1st** | Tuition and Fee Payment Deadline (10-week, 8-week, 1st 5 week sessions)
- **Mon, 4th** | Class begins (1st 5 week, 10 week and 8 week)
- **Mon, 4th** | ADD/DROP/LATE REGISTRATION BEGINS (10-week, 8-week, & 1st 5-week sessions) (\$25 fee assessed for late registrants)
- **Thu, 7th** | Last day to drop 1st 5-week classes with no record
- **Mon, 11th** | Last day to drop 8-week classes with no record
- **Tue, 12th** | Last day to drop 10-week classes with no record
- **Fri, 22nd** | Last day to drop a 1st 5-week class with a Q or withdraw with a W
- **Fri, 22nd** | Student End of Course Survey Opens (1st 5-Week Classes)
- **Fri, 29th** | Deadline for Admissions applications
- **Fri, 29th** | Deadline for submission of final committee-edited theses with committee approval signatures to Office of Graduate Studies
- **Fri, 29th** | Last day to drop a 8-week class with a Q or withdraw with a W

July 2018

- **2nd-6th** | Finals Week First 5 week session
- **Mon, 2nd** | Deadline to submit application to Teacher Education Program
- **Wed, 4th** | Independence Day
- **Thu, 5th** | Last day to withdraw from the university (1st 5- weeks session students)

- **Fri, 6th** | 1st 5 week classes end
- **Fri, 6th** | Deadline to Submit Graduation Application for Ceremony Participation
- **Sun, 8th** | Student End of Course Survey Opens (1st 5-Week Classes)
- **Mon, 9th** | 2nd 5 week classes begin
- **Mon, 9th** | Grades due from faculty by 3pm (1st 5 week classes)
- **Mon, 9th** | ADD/DROP/LATE REGISTRATION (2nd 5-week sessions) (\$25 fee assessed for late registrants)
- **Thu, 12th** | Last day to drop 2nd 5-week classes with no record
- **Fri, 13th** | Student End of Course Survey Open (8-Week Classes)
- **Fri, 20th** | Last day to drop a 10-week class with a Q or withdraw with a W
- **23rd-27th** | Finals Week - Summer 8 week session
- **Fri, 27th** | Last day to drop a 2nd 5-week class with a Q or withdraw with a W
- **Fri, 27th** | Last day to withdraw from the University (8 weeks session students)
- **Fri, 27th** | 8 week classes end
- **Fri, 27th** | Deadline for submission of final committee-edited theses with committee approval signatures to Office of Graduate Studies
- **Sun, 29th** | Student End of Course Survey Close (8-Week Classes)
- **Sun, 29th** | Student End of Course Survey Opens (10-Week and 2nd 5-Week Classes)
- **Mon, 30th** | Grades due from faculty by 3pm (8 week classes)

TECHNOLOGY REQUIREMENTS AND SUPPORT

Technology Requirements

This course will use the A&M-Central Texas Instructure Canvas learning management system. Logon to A&M-Central Texas Canvas [<https://tamuct.instructure.com>].

Username: Your MyCT username (xx123 or everything before the "@" in your MyCT e-mail address)
 Password: Your MyCT password

Canvas Support

Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select “Chat with Canvas Support,” submit a support request through “Report a Problem,” or call the Canvas support line: 1-844-757-0953.

For issues related to course content and requirements, contact your instructor.

Other Technology Support

For log-in problems, students should contact Help Desk Central.

24 hours a day, 7 days a week:

Email: helpdesk@tamu.edu

Phone: (254) 519-5466

[Web Chat](http://hdc.tamu.edu): [http://hdc.tamu.edu]

Please let the support technician know you are an A&M-Central Texas student.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Drop Policy.

If you discover that you need to drop this class, you must complete a [Drop Request Form](https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf) [https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf].

Professors cannot drop students; this is always the responsibility of the student. The Registrar’s Office will provide a deadline on the Academic Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar’s Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar’s Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Academic Integrity.

Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student’s academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student’s work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university’s Office of Student Conduct. Ignorance of the university’s standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

Academic Accommodations.

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Department of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations please contact the Department of Access and Inclusion at (254) 501-5831. Any information you provide is private and confidential and will be treated as such.

For more information please visit our [Access & Inclusion](https://www.tamuct.edu/student-affairs/access-inclusion.html) web page [https://www.tamuct.edu/student-affairs/access-inclusion.html].

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit the [Student Affairs](https://www.tamuct.edu/student-affairs/index.html) web page [https://www.tamuct.edu/student-affairs/index.html]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these [requirements and guidelines online](http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf), please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender—including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

Tutoring.

Tutoring is available to all A&M-Central Texas students, both on-campus and online. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or have any other question, contact Academic Support Programs at (254) 519-5796, or by emailing Dr. DeEadra Albert-Green at deeadra.albertgreen@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive FREE

online tutoring and writing support. This tool provides tutoring in over 40 subject areas. Access Tutor.com through Canvas.

University Writing Center: Located in 416 Warrior Hall, the University Writing Center (UWC) at Texas A&M University-Central Texas is a free workspace open to all TAMUCT students from 10am-4pm Monday-Thursday during the summer with online hours available Monday-Thursday from 6:00-9:00pm. Students may arrange a one-on-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via [WCOOnline](#) at [<https://tamuct.mywconline.com/>]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu to schedule an online tutoring session. Tutors are prepared to help writers of all levels and abilities at any stage of the writing process.

While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the University Writing Center is here to help!

If you have any questions about the University Writing Center, please do not hesitate to contact Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu.

University Library.

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all

ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index].
