EENG 4760 Reconfigurable Computing
Spring 2026
Time: (Tu, Th) 10:00 - 11:20 am
Meeting Place: NTDP B227

Instructor: Gayatri Mehta
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Hours: (Tu, Th) 11:30 am – 1 pm
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Welcome to UNT!

As members of the UNT community, we have all made a commitment to be part of an institution that respects and values the identities of the students and employees with whom we interact. UNT does not tolerate identity-based discrimination, harassment, and retaliation. UNT's full Non-Discrimination Policy can be found in the UNT Policies section of the syllabus.

Course Description:

This course focuses on the fundamental architectural aspects of different reconfigurable devices including some of the commercially available FPGAs, and coarse-grained reconfigurable fabrics from academia and industry. Includes both a description of the architectures and discussion of pros and cons of these architectures for different applications and user needs, including the need for run-time reconfiguration. Also covers various low power reconfigurable devices.

Course Topics:

- Introduction to reconfigurable architectures
- Fine-grained reconfigurable architectures
- Coarse-grained reconfigurable architectures
- Homogeneous and Heterogeneous architectures
- Partial reconfiguration
- Run-time reconfiguration
- Critical design concerns of semiconductor industry including power, area and performance
- Interconnect structures in reconfigurable architectures
- Design and simulate reconfigurable architectures

Course Prerequisites:

EENG 2710 (and EENG 2711 for electrical engineering students) must be completed with a C or better.

Course Objectives:

By the end of the course, you will

- Understand fundamental concepts of reconfigurable architectures
- Understand a variety of computational blocks and interconnect structures

- Understand pros and cons of various reconfigurable architectures including fine-grained and coarse-grained architectures
- Understand the concept of partial reconfiguration
- Understand advantages and disadvantages of homogeneous vs heterogeneous architectures
- Understand dynamic / run-time reconfiguration
- Understand the importance of low-energy, high performance, and area-efficient reconfigurable architectures
- Develop ability to use commercial CAD tools to design and simulate digital circuits
- Develop technical writing skills
- Develop project presentation skills

Grading:

- Assignments: 30%
- Research Topic Presentation: 10%
- Project 1: 30%
- Project 2: 30%

Course Evaluation

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course.

Disabilities Accommodation:

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940565-4323 during the first week of class.

Additional Policies and Procedures

Course material including syllabus, lectures, assignments, and announcements will be posted on Canvas. Assignments will be submitted on canvas using submission links provided. If you have any questions or concerns regarding the course, you can reach the instructor at **gayatri.mehta@unt.edu. Please use your UNT email address for all the communication.**

Assignments submitted more than 1 day late will not be graded. Late assignment is penalized at 10% of the total points deduction per day. The penalty will be calculated based on the timestamp of the Canvas submission. For example, if the assignment is of 100 total points, then the penalty is 10 points for up to 24 hours late.

No late submissions are allowed for Projects 1 and 2. Projects submitted late will not be graded.

Students are expected to attend class meetings regularly. If you know ahead of time that you will miss a class, contact me via email in advance.

Extra Help: Please do not wait until the last minute. If you are having trouble with this class, please let me know.

Academic Integrity Policy: Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

ADA Policy: UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).

Emergency Notification & Procedures: UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Technical Assistance

UIT Help Desk: UIT Student Help Desk site (http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu
Phone: 940-565-2324
In Person: Sage Hall, Room 130 **Walk-In**
Availability: 8am-9pm **Telephone**
Availability:

- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit Canvas Technical Help (https://community.canvaslms.com/docs/DOC-105544212710328)

Academic Support Services

- Academic Resource Center (https://clear.unt.edu/canvas/student-resources)
- Academic Success Center (https://success.unt.edu/asc)
- UNT Libraries (https://library.unt.edu/)
- Writing Lab (http://writingcenter.unt.edu/)

Please note that information in this syllabus is subject to change at any time during the semester with changes to be announced in class.