University of North Texas, College of Engineering
Department of Electrical Engineering
EE2710: Digital Logic Design
Fall 2020

Instructor: Dr. Edgard Muñoz-Coreas
Office Hours: Thursday 1-3pm or by appointment. Remote (Zoom)
Contact: Edgard.Munoz-coreas@unt.edu
Lecture: Tuesday-Thursday 5:30-6:50pm Remote (Zoom)
Teaching Assistant: Karthikeya Anil Kumar Kakaraparty
TA Office Hours: TBD
Required Textbook: V. P. Nelson, H. T. Nagle, J. D. Irwin, and B. D. Carroll,

Description:

The purpose of this course is to introduce you to digital computers and information processing systems. This course covers boolean algebra, principles and methodology of logic design, machine language programming, register transfer logic, microprocessor hardware, software and interfacing, fundamentals of circuits and systems, computer organization and control, memory systems, arithmetic unit design.

Learning Objectives:

To impart students with foundational knowledge in Digital Logic designs. Students should leave this course able to analyze digital logic systems with the techniques shown in this class. Students should leave this course able to recognize combinatorial and sequential components used in computer systems, construct them and understand their functionality. Students will leave this class with experience in designing complete digital logic systems.

Course Outline [tentative]

- Topic 1: Introduction
- Topic 2: Number Systems
- Topic 3: Boolean Algebra, Canonical representations, logic gates
- Topic 4: Digital logic minimization, digital logic analysis, introduction to timing
- Midterm 1
- Topic 5: combinatorial logic elements, design and analysis
- Topic 6: sequential (or state) elements, design and analysis
- Topic 7: Modular design techniques, datapath circuits
- Midterm 2
• Textbf{Topic 8:} Design of synchronous logic systems

• Textbf{Topic 9:} Design of Asynchronous logic systems

• Textbf{Topic 10:} Reversible Logic and Emerging Computation systems

• Textbf{Cumulative Final Examination:} 5:30 PM Tuesday 12/8/2020

**Grading Policy**

Breakdown of Grading
Midterms: 50% (25% apiece)
Final: 30%
Homework: 20%

• All email communications to the Instructors Shall use the following in their title [EE2710s04business-[your first name]-[date]]. Messages not so titled will be dismissed as spam.

• No extra credit will be offered in this class.

• *Excuses for examinations and homework will be permitted only for excused absences outlined in UNT policy 06.039.* Students shall follow procedures in UNT policy 06.039 to notify instructor of absence. **Otherwise, there will be no make up exams.**

• Homework is due by the beginning of class. Homework submitted one day late will be penalized 50%. Homework submitted two or more days late will receive a zero.*

• After an assignment is returned, you have one week to contest any grade issues.

• Pursuant Americans with Disabilities Act and UNT policy 16.001, Students with disabilities *please notify the instructor as soon as possible.* Impacted students are also encouraged to reaching out to the Office of Disability Accommodation as well.

• *No tolerance for Academic Dishonesty.* Pursuant UNT policy 06.003, Students found guilty of academic dishonesty shall receive a F for the course and may be subject to additional discipline.

**Canvas:**

All submissions, grading and materials will be through Canvas. *If you are experiencing Canvas issues please notify the instructors and UNT IT personnel as soon as possible* Notifications to the instructors must be in writing. *Make up examinations and homework extensions may be granted due to documented Canvas outages at the discretion of the instructor

**Zoom:**

All course meetings will be remote through Zoom. *If you are experiencing Zoom issues please notify the instructors and UNT IT personnel as soon as possible* Notifications to the instructors must be in writing.