CLASS MEETINGS: VIN 147
T 12:30PM–01:45PM
R 12:30PM–04:50PM

CONTENTS

REQUIRED MATERIALS ........ 2
COURSE OVERVIEW ........ 2
COURSE COMPONENTS ....... 3
GRADING POLICIES ......... 4
STRATEGIES FOR SUCCESS . 4
CLASSROOM ETIQUETTE .... 5
GENERAL POLICIES RELATED TO THIS COURSE ........ 5
MODIFICATIONS TO THE SYLLABUS ............... 5
INCLUSIVE LEARNING ENVIRONMENT ............. 6
ACADEMIC INTEGRITY ....... 8
COURSE CALENDAR ........ 9
CONTACT INFORMATION

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Webpage: www.mcholcomb.com/teaching

Office Hours
Monday  8:30–9:50am
Tuesday  8:30–9:20am
Wednesday 8:30–9:50am
Thursday 8:30–9:20am
Also available by appointment

COURSE OVERVIEW

This course will present a study of the behavior of digital logic circuit elements, with an emphasis on applications in research, instrumentation, industrial controls, and computer design. Although scheduled as separate lecture and laboratory sections, lecture and laboratory periods will not be treated as isolated components of the course and will instead be blended and intermixed.

This course is intended to reinforce existing knowledge of the scientific method and develop an understanding of basic digital devices and circuits which comprise simple computer systems. To this end, the course will emphasize a mix of conceptual questions, logical-reasoning skills, and the application of theoretical principles in a hands-on setting. The lab will provide an opportunity to explore the correlation between theory and practice.

Expected Learning Outcomes
The expected learning outcomes for the course, listed below, will be assessed through performance on guided classroom discussions, worksheets, and embedded questions within the exams.

- Transform combinational logic information between truth tables, Boolean expressions, logic diagrams, and schematic diagrams.
- Transform sequential logic information between state tables and state diagrams.
- Transform integer numbers between signed and unsigned decimal, binary, octal, and hexadecimal representations.

REQUIRED MATERIALS

- Digital Design by Mano/Ciletti
  4th, 5th, or 6th Edition is acceptable
- Gradescope account – Free to ASU students; you will receive an email with sign-up information.
- Access to a computer with reliable high-speed internet access
- Access to a scanning device OR a handwriting-capable computer or tablet
COURSE COMPONENTS

Lecture & Participation
Lecture will be offered in a modified inquiry-based format. All students will be expected to attend lecture face-to-face and are strongly encouraged to wear face coverings. Please thoroughly read the section of this syllabus regarding classroom etiquette for further information on expectations for lecture attendance.

Lecture Preparation
You are expected to have access to the assigned texts, paper for notes, and a suitable writing utensil (preferably a pencil with an eraser), and a scientific calculator at every class meeting. If you have access to a handwriting capable tablet, it may be used in place of paper for notetaking. You will likely find it helpful to read ahead in the textbook before each class.

Individual and Team-Based Worksheets (ITBW)
Throughout the term you will be asked to complete individual and team-based worksheets. These will consist of problems covering material that was recently discussed in class and may be either in-class or take-home worksheets. Unless explicitly assigned as take-home, worksheets are to be completed during class time. Some worksheets may be paper-only; however, most will involve building a circuit. You will be expected to scan completed worksheets to PDF and submit them for grading via Gradescope.

No makeup worksheets will be given. Late submission of worksheets is generally reserved for the case of extenuating circumstance, at the instructor's discretion; however, if you are unable to complete all the assigned worksheets after working on them during all available class time, talk to the instructor.

Exams
Three (3) take home exams will be administered as scheduled. No makeup exams will be given, so please plan accordingly. All exams will be made available via Blackboard and you are expected to print a copy of the exam, scan your completed exam to PDF, and then submit for grading via Gradescope. Please see the course calendar on the last page of this syllabus for scheduled exam dates and anticipated content.

Exam Rules
Calculators, the assigned textbook, instructor-provided materials, and your own lecture notes are permitted. Cell phones and smart watches are not considered to be calculators regardless of what apps may have been installed. Any other reference materials (including sources found via the internet) are not permitted. If I believe that you have made use of restricted materials or devices during the exam, you will be issued a zero for the exam without exception and may be reported to the Office of Student Conduct.
GRADING POLICIES

The following scores will be recorded during the course of the semester: ITBW, Exam 1, Exam 2, Exam 3, Final Exam. The course grade will be the weighted average of ITBW at 40% and Exams at 15% each.

There are no makeup ITBW; however, the 5 lowest scores will be dropped. The instructor reserves the right to increase this number at their discretion. The number of dropped scores will never be decreased below what is shown.

There are no makeup exams; however, the final exam score can replace the lowest midterm. In other words, the four highest scores from Exam 1, Exam 2, Exam 3, Final Exam, and Final Exam will be considered for the course grade.

Your letter grade will be determined on the following scale: F (≤59), D (60-69), C (70-79), B (80-89), A (90-100). The instructor reserves the right to lower the boundaries between letter grades at their discretion. The boundaries will never be raised above what is shown.

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required.

Please see ASU Operating Policy 10.11 Grading Procedures for more information.

STRATEGIES FOR SUCCESS

Be prepared! These tips will help you keep up, make for more productive classroom interaction, and help you be prepared for homework, labs, and exams that make up your semester grade.

• Pay special attention to examples worked in class.
• Study your notes.
• Read the material in the text before we cover it in class.
• Begin all homework assignments as soon as possible. Don’t get behind or wait until just before an exam to begin.
• Make use of the free in-person and online tutoring services available through the Tutoring Center.
• Supplemental Instruction (SI) sessions for some classes are offered through the campus Tutoring Center. These sessions can help you review difficult concepts as a group.
• If you are stuck, come prepared with questions during office hours or make an appointment to meet at another time.
• Once you can work through a problem with your notes, book, study group, etc., be sure you can rework it entirely on your own.
• Don’t “blow off” any exam just because there is a dropped score. The purpose of the dropped score is in case of illness or other extenuating circumstances.
CLASSROOM ETIQUETTE
Attending lecture is mandatory. You are considered both advised and responsible for anything discussed during lecture. Leaving lecture early or arriving late is considered both rude and distracting. If you have an expected reason to depart early, please inform the lecturer at the beginning of class.

All students are expected to be respectful of their peers during lecture by not becoming a distraction. If you become a distraction to other students, then you will be dismissed from class for that day. Some actions, including but not limited to the following, will result in you being considered a distraction to your peers: repeatedly arriving late, reading unrelated material, using your cell phone in any way outside of approved exercises, visiting with your neighbor, sleeping, eating, “vaping,” and the use of any and all tobacco products.

No laptops or any other electronic devices are allowed in class unless the need for such a device for reason of a disability is documented by Student Disability Services.

GENERAL POLICIES RELATED TO THIS COURSE
All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook
- Angelo State University Catalog

MODIFICATIONS TO THE SYLLABUS
All components of this syllabus are subject to modification at the lecturer's discretion. In particular, the ongoing COVID-19 pandemic may require changes in course delivery, grade evaluation, schedule, and content on potentially short notice.
INCLUSIVE LEARNING ENVIRONMENT  (Adapted from Yale Center for Teaching and Learning)

Civility and Respect

Our university supports and wants to foster a civil, respectful, and open-minded climate so that all of us can live and work in an environment free of harassment, bias-motivated behaviors, unfair treatment, and fear. The university expects all members of our community to refrain from actions or behaviors that intimidate, humiliate, or demean persons or groups or that undermine their security or self-esteem based on traits related to race, ethnicity, country of origin, religion, gender identity/expression, sexual orientation, age, or physical or mental ability, including learning and/or developmental disabilities and past/present history of mental disorder or other category protected by state or federal law.

Accommodations for Students with Disabilities

Angelo State University is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Director of Student Disability Services
Dallas A. Swafford
Email: dallas.swafford@angelo.edu
Office
Houston Harte University Center, Room 112
Office Email: ada@angelo.edu
Office Phone: 325.942.2047
Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct.

Sexual misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex. For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit: www.angelo.edu/title-ix.

Note from Dr. Holcomb: As a faculty member at Angelo State, I am a mandatory reporter and am obligated to report incidents involving sexual misconduct to the Title IX Coordinator.

Students are encouraged to report any incidents of sexual misconduct directly to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Director of Title IX Compliance and Title IX Coordinator
Michelle Boone, J.D.
Email: michelle.boone@angelo.edu
Office
Mayer Administration Building, Room 210
Office Phone: 325.942.2022
Report an incident: www.angelo.edu/incident-form

Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.
ACADEMIC INTEGRITY

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the Statement of Academic Integrity.

Plagiarism

Plagiarism is a serious topic covered in ASU’s Code of Conduct and Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and representing it as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas, giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality. Resources to help you better understand this policy better are available at the ASU Writing Center.

Copyright Policy

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.
Our tentative course calendar is below. I reserve the right to change this calendar as needed; however, I will inform you in class and via Blackboard announcement of any changes.

Remember to check our Blackboard class page regularly for assigned readings and homework. Also remember to check your university email (RamMail) account regularly for class updates and other important university correspondence.

<table>
<thead>
<tr>
<th>Week of Events</th>
<th>Lecture Topic</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>Aug. 23</td>
<td><strong>Tuesday, Aug. 24:</strong> First class meeting</td>
<td>Boolean Algebra and Logic Gates</td>
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<tr>
<td>Aug. 30</td>
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<td>Boolean Algebra and Logic Gates</td>
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<tr>
<td>Sept. 06</td>
<td><strong>Monday, Sept. 06:</strong> University holiday, no class</td>
<td>Gate-Level Minimization</td>
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<td>Sept. 13</td>
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<td>Gate-Level Minimization</td>
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<td>Sept. 20</td>
<td><strong>Friday, Sept. 24:</strong> Exam 1 Assigned (Ch. 2, 3)</td>
<td>Digital Systems and Binary Numbers</td>
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<tr>
<td>Sept. 27</td>
<td><strong>Monday, Sept. 27:</strong> Exam 1 Due</td>
<td>Digital Systems and Binary Numbers</td>
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<td>Oct. 04</td>
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<td>Combinational Logic</td>
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<td>Oct. 11</td>
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<td>Combinational Logic</td>
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<tr>
<td>Oct. 18</td>
<td><strong>Friday, Oct. 22:</strong> Exam 2 Assigned (Ch. 1, 4)</td>
<td>Combinational Logic</td>
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<tr>
<td>Oct. 25</td>
<td><strong>Monday, Oct. 25:</strong> Exam 2 Due</td>
<td>Synchronous Sequential Logic</td>
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<td>Nov. 01</td>
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<td>Synchronous Sequential Logic</td>
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<td>Nov. 08</td>
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<td>Registers and Counters</td>
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<tr>
<td>Nov. 15</td>
<td><strong>Friday, Nov. 19:</strong> Exam 3 Assigned (Ch. 5, 6)</td>
<td>Registers and Counters</td>
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<tr>
<td>Nov. 22</td>
<td><strong>Monday, Nov. 22:</strong> Exam 3 Due  &lt;br&gt; <strong>Monday, Nov. 22:</strong> Last day to drop or withdraw  &lt;br&gt; <strong>Wednesday, Nov. 24 – Friday, Nov. 26:</strong> Thanksgiving Holiday Break</td>
<td>Memory and Programmable Logic</td>
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<td>Nov. 29</td>
<td><strong>Sunday, Dec. 05:</strong> Final Exam Assigned (Comprehensive)</td>
<td>Memory and Programmable Logic</td>
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<tr>
<td>Dec. 06</td>
<td><strong>Thursday, Dec. 09:</strong> Final Exam Due</td>
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* All due times are 11:59 pm CST, unless otherwise specified.