Instructor: Charles Allen
Email: charles.allen@angelo.edu
Phone: 325/486-6780
Office: VIN 126

Office Hours: M 13:00-15:00, T 09:00-11:00, W 11:00-12:00, R 09:00-11:00 and 14:00-16:00

Course Information

Course Description
A study of the behavior of digital logic circuit elements, with an emphasis on applications in research instrumentation, industrial controls, and computer design.

Prerequisite and Co-requisite Courses
CS-2336 or CS-3304 or PHYS-2426 or (PHYS-2126 and PHYS-2326)

Student Learning Outcomes
Upon completion of this course, students will be able to:

- 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.

Course Delivery
This is a face-to-face course with additional learning resources and supplementary materials posted in Blackboard. Although technically split into separate lecture and lab sections, lecture and lab are intermixed in the (single) classroom used.

Required Texts and Materials
*Digital Design*, Mano/Ciletti, 4th, 5th, or 6th edition
Communication
Faculty will respond to email within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday.

Written communication via email: All private communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails to faculty, include the course name and section number in your subject line.

Grading

Evaluation and Grades
Course grades will be determined as indicated in the table below.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percent of Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worksheets, in class and as homework</td>
<td>40</td>
</tr>
<tr>
<td>Midterm Exams</td>
<td>40</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Grading System
Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is initially in use for this course:
- A = 90.00-100 points
- B = 80.00-89.99 points
- C = 70.00-79.99 points
- D = 60.00-69.99 points
- F = 0-59.99 points (Grades are not rounded up)

The instructor may, at his discretion, lower the boundaries between letter grades. The boundaries will never be raised above what is shown.

Assignment and Activity Descriptions
Every day without an exam, you will complete at least one worksheet with problems covering the material discussed that day in class. The worksheets may be paper-only problems, but most will involve building a circuit. Unless explicitly assigned as homework, worksheets are to be completed during class time. If you are unable to
complete all the assigned worksheets after working on them during all available class
time, talk to the instructor. Your lowest worksheet scores will be dropped before
incorporating your worksheet score into your grade. The exact number will depend on
how many worksheets the class completes during the semester.

Three midterm exams will be given during class. A comprehensive final exam will be
given during the normal final exam period for this lecture period.

Policy on Late Work or Missed Assignments.

Students absent from class due to a University obligation should talk to the instructor
about how the student will make up any missed work. This discussion should take
place a week or more ahead of the absence.

Work missed due to illness or non-university events is generally not able to be made up.
To account for this, the lowest 5 worksheet scores are dropped.

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

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 university’s Statement
of Academic Integrity.

Accommodations for Students with Disabilities
ASU 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:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
dallas.swafford@angelo.edu  
Houston Harte University Center, Room 112

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. See ASU Operating Policy 10.11 Grading Procedures for more information.

Plagiarism  
Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off 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 understand this policy better are available at the ASU Writing Center.

Student Absence for Observance of 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 Days for more information.
Title IX at Angelo State University

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

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:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
michelle.boone@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit www.angelo.edu/title-ix.
# Course Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture ID</th>
<th>Lecture Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 14</td>
<td>2A</td>
<td>Boolean Algebra and Logic Gates</td>
</tr>
<tr>
<td>Jan 16</td>
<td>2B</td>
<td></td>
</tr>
<tr>
<td>Jan 21</td>
<td>3A</td>
<td>Gate-Level Minimization</td>
</tr>
<tr>
<td>Jan 23</td>
<td>3B</td>
<td></td>
</tr>
<tr>
<td>Jan 28</td>
<td>3C</td>
<td></td>
</tr>
<tr>
<td>Jan 30</td>
<td>R-2-3</td>
<td>Review</td>
</tr>
<tr>
<td>Feb 4</td>
<td>X-2-3</td>
<td>Midterm Exam: Chapters 2 &amp; 3</td>
</tr>
<tr>
<td>Feb 6</td>
<td>1A</td>
<td>Digital Systems and Binary Numbers</td>
</tr>
<tr>
<td>Feb 11</td>
<td>1B</td>
<td></td>
</tr>
<tr>
<td>Feb 13</td>
<td>1C</td>
<td></td>
</tr>
<tr>
<td>Feb 18</td>
<td>4A</td>
<td>Combinational Logic</td>
</tr>
<tr>
<td>Feb 20</td>
<td>4B</td>
<td></td>
</tr>
<tr>
<td>Feb 22</td>
<td>4C</td>
<td></td>
</tr>
<tr>
<td>Feb 27</td>
<td>4D</td>
<td></td>
</tr>
<tr>
<td>Mar 3</td>
<td>4E</td>
<td></td>
</tr>
<tr>
<td>Mar 5</td>
<td>R-1-4</td>
<td>Review</td>
</tr>
<tr>
<td>Mar 17</td>
<td>X-1-4</td>
<td>Midterm Exam: Chapters 1 &amp; 4</td>
</tr>
<tr>
<td>Mar 19</td>
<td>5A</td>
<td>Synchronous Sequential Logic</td>
</tr>
<tr>
<td>Mar 24</td>
<td>5B</td>
<td></td>
</tr>
<tr>
<td>Mar 26</td>
<td>5C</td>
<td></td>
</tr>
<tr>
<td>Mar 31</td>
<td>5D</td>
<td></td>
</tr>
<tr>
<td>Apr 2</td>
<td>6A</td>
<td>Registers and Counters</td>
</tr>
<tr>
<td>Apr 7</td>
<td>6B</td>
<td></td>
</tr>
<tr>
<td>Apr 9</td>
<td>6C</td>
<td></td>
</tr>
<tr>
<td>Apr 14</td>
<td>6D</td>
<td></td>
</tr>
<tr>
<td>Apr 16</td>
<td>R-5-6</td>
<td>Review</td>
</tr>
<tr>
<td>Apr 21</td>
<td>X-5-6</td>
<td>Midterm Exam: Chapters 5 &amp; 6</td>
</tr>
<tr>
<td>Apr 23</td>
<td>R-ALL</td>
<td>Go over exam(s) and worksheets</td>
</tr>
<tr>
<td>Apr 28</td>
<td>XTRA</td>
<td>Additional non-tested, fun material</td>
</tr>
<tr>
<td>Apr 30</td>
<td>CLEAN</td>
<td>Cleanup, course assessment</td>
</tr>
<tr>
<td>May 7</td>
<td>FINAL</td>
<td>Comprehensive Final Exam at 10:30</td>
</tr>
</tbody>
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1. [https://www.angelo.edu/student-handbook/](https://www.angelo.edu/student-handbook/)
2. [https://www.angelo.edu/catalogs/](https://www.angelo.edu/catalogs/)
4. [https://www.angelo.edu/services/disability-services/](https://www.angelo.edu/services/disability-services/)
5. [https://www.angelo.edu/content/files/14197-op-1011-grading-procedures](https://www.angelo.edu/content/files/14197-op-1011-grading-procedures)
7. [https://www.angelo.edu/dept/writing_center/academic_honesty.php](https://www.angelo.edu/dept/writing_center/academic_honesty.php)
https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of