

**1. Course Title:**

**Digital Circuits**  
**EET 371 – 4 Credits**

EET Program Requirement

Prerequisite: EET 221

This is a Technical content course under ABET Criterion 5

**2. Faculty Member Information:**

Instructor:

Office: Hebeler 101A

Phone: 509-963-1763

E-mail: [gumaerj@cwu.edu](mailto:gumaerj@cwu.edu)

**3. Course Description:**

Introduction to digital circuit logic, analysis, and design, including number systems, Boolean algebra, and combinational and sequential logic. Digital systems are evaluated in the laboratory.

**4. Textbook and other required materials for the course:**

Floyd, Thomas L., *Digital Fundamentals*, 9<sup>th</sup> Ed, Pearson Education Inc., 2006

**5. Specific Learner and Expressive Outcomes and Assessment Strategies:**

ABET Outcome Criteria #	Learner Outcomes	Assessment
	1. The student will understand the binary, decimal, and hexadecimal number systems and be able to convert between them.	The student will complete homework assignments, a written test, laboratory work, and write reports on laboratory work.
	2. The student will be able to use Boolean algebra, truth tables, and Karnaugh maps to analyze digital circuits.	The student will complete homework assignments and a written test.
9.A.6.	3. The student will be able to implement circuits using combinational and sequential logic.	The student will complete laboratory assignments and write reports on laboratory work
	4. The student will be able to use manufacturer's data sheets to select appropriate digital logic circuits.	The student will complete homework assignments, a written test, laboratory work, and write reports on laboratory work.
	5. The student will communicate their development process, work, assumptions, and evaluations to their peers and instructor.	The student will write lab reports with a purpose, objective, results and appendices that contain the design and development process used in the laboratory.

**6. Course Topics and Schedule:**

The following schedule represents the intended sequence of study. The schedule is subject to adjustment to meet the needs of the class. The readings are from the Floyd text.

<b>Week of</b>	<b>Topic</b>	<b>Reading</b>
	Introduction, Number Systems	pp. 2-21, pp. 46-81
	Number Systems, Logic Gates	pp. 84-94, pp. 112-142
	Boolean Algebra, Karnaugh Maps	pp. 182-220
	Combinational Logic, Exam 1	pp. 244-264
	Exam 1 post-mortem, Functions	pp. 296-315
	Decoders/Encoders	pp. 316-328
	Muxes	pp. 329-344
	Exam 2, Latches	pp. 372-377
	Exam 2 post-mortem, Flip-Flops	pp. 378-397
	Timers	pp. 398-408
	One-Shots, Review	
	Final Exam 8:00-9:50 AM (Comprehensive)	

### **7. Grading:**

Your final grade will be based on the number of points you earn during the quarter. There will be a total of 500 points possible. There will be two in-class exams worth 50 points each and a comprehensive final exam worth 100 points. The remaining 300 points will come from homework and lab assignments. The grading scale is as follows:

A = Over 464 B = 415-434 C = 365-384 D = 315-334

A- = 450-464 B- = 400-414 C- = 350-364 D- = 300-314

B+ = 435-449 C+ = 385-399 D+ = 335-349 F = 299 and below

### **8. ADA Statement:**

Students who have special needs or disabilities that may affect their ability to access information and or material presented in this course are encouraged to contact me or Robert Harden, ADA Compliance Officer, Director, ADA Affairs and Students Assistance on campus at 963-2171 for additional disability related educational accommodations.