

## 1. Course Title

### Basic Electronics EET 312 – 5 Credits

EET Program Requirement offered each fall

Prerequisite: EET 221

This is a Technical content course under ABET Criterion 5

## 2. Faculty Member Information:

Instructor:

Office: Hebler 101A

Phone: 509-963-1763

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

## 3. Course Description:

Analysis of semiconductor devices and their application in power supplies, amplifiers, and control circuits. Theoretical concepts will be reinforced by circuit simulation and laboratory experimentation.

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

Paynter, & Boydell, *Electronic Technology Fundamentals* 2<sup>nd</sup> Ed, Prentice Hall, 2005

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

ABET Outcome Criteria #	Learner Outcomes	Assessment
	1. The student will construct and analyze Resistive-Inductive-Capacitive (RLC) circuits.	The student will complete a written test and perform laboratory assignments
	2. The student will analyze passive circuit frequency response.	The student will complete a written test and perform laboratory assignments
9.B.	3. The student will construct and analyze diode circuits.	The student will complete a written test and perform laboratory assignments
9.A.1.	4. The student will analyze bipolar junction transistors (BJT) circuits and Field-Effect Transistors (FET).	The student will complete a written test and perform laboratory assignments
	5. The student will construct multistage amplifiers and analyze their output.	The student will complete a written test and perform laboratory assignments
3.a 9.A.4.	6. The student will analyze amplifiers frequency response.	The student will complete a written test and perform laboratory assignments
9.A.5.	7. The student will construct and analyze operational amplifiers (Op-Amps) basic circuit configurations.	The student will complete a written test and perform laboratory assignments
	8. The student will construct and analyze switching circuits.	The student will complete a written test and perform laboratory assignments
	9. The student will construct and analyze voltage regulator circuits.	The student will complete a written test and perform laboratory assignments
	10. The student will construct and analyze special devices.	The student will complete a written test and perform laboratory assignments
	11. The student will use logical troubleshooting techniques to debug problems.	The student will revise circuits and the required instrumentation setup and describe the process in the associated

		lab report.
	12. The student will communicate assumptions, results (data), and conclusions about technical information in a coherent and prescribed format.	The student will complete a written test and write up the findings of the laboratory assignments in a prescribed report format.

## 6. Course Topics and Schedule:

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

Week of	Topic	Reading	Lab
	Diodes, Zeners, LEDs	Ch. 17.5-17.13	None
	Diode Applications	Ch. 18.1-18.5, 18.7	28,29
	Transistors	Ch. 19.1-19.6, 19.8	30,31
	Transistor Amplifiers	Ch. 20.1-20.4, 20.7	32,33
	Transistor Amplifiers		35
	JFETs and MOSFETs, Exam 1	Ch. 21.1, 21.2, 21.5	36
	Op Amps	Ch. 22.1-22.7	39,40
	Op Amps, Switching	Ch. 24.1-24.4	41,44
	Switching, Regulators	Ch. 25.1-25.5	45,46
	Thyristors, Review	Ch. 26.2-3, 26.5-6	47,48
	Final Exam 12:00-1:50 PM (Comprehensive)		

## 7. Grading:

Your final EET312 grade will be based upon the number of points earned during the quarter. There will be a total of 500 points possible. The point breakdown and grading scale are shown below.

Mid-term Exam	50
Final Exam	100
Homework	150
Book Labs	100
Projects	100
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Total Points	500

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.