

# ETec375 Course Specifications

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## Catalog Information

**Course Number and Title:** ETec375 – Electronic Systems

**Credit Hours:** 5

**Course Description:** A study designed to acquaint the student with the operation of electronic systems. Feedback systems, multi-phase power systems and solid state control systems. Structured laboratory with emphasis on experimental verification of results, original design, data analysis and formal report preparation.

**Prerequisites:** Pre- or co-req: ETEC 372, EET major or written permission.

**Prerequisite Outcomes:**

## Schedule Information

**Quarter:** Spring 2007

**Meeting Times and Rooms**

Days	Times	Instructor	Room(s)
MTWR	1:00-1:50	F.D. Harris	ES123
R	2:00-3:50	F.D. Harris	ET331

**Lab Fee:** \$10.00

**Enrollment Limit:** 18

## Student Resources

**Student Syllabus:** <http://eet.etec.wvu.edu/etec375/375sp07syl.pdf>

**Course Website:** <http://eet.etec.wvu.edu/etec375/index.html>

## Facilities and Materials

**Required Text:** "Electronic Devices and Circuits", 6th Edition, Theodore Bogart

"Experiments in Electronic Devices and Circuits", 6<sup>th</sup> Edition, Bogart & Brown

**Lab Equipment:** Prototype Board, DMM, VOM, DC Power Supply, Oscilloscope, Function Generator.

**Software:** pSpice

## Course Outcomes

1. Be able to design and analyze discrete amplifier circuits.
2. Be able to design and analyze power supply circuits using discrete devices and 3-terminal linear regulators.
3. Be able to design and analyze circuits incorporating operational amplifiers.
4. Be able to use circuit analysis software to analyze circuits incorporating active devices.
5. Gain practical experience in the use of basic test equipment.
6. Be able to analyze transistor and IC power dissipation and the application of heat sinks.

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### Courses Contribution to the Program Outcomes

P – Primary to the purpose of the course. Course contains significant instruction and opportunities for practice.

S – Secondary to the purpose of the course. Course contains limited instruction and opportunities for practice.

N – Not a significant part of this course.

Program Outcome		Course Contrib	Applicable Course Outcome(s)
a	An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.	P	1, 2, 3, 4, 5, 6
b	An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology	P	1, 2, 3, 4, 6
c	An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes	P	5
d	An ability to apply creativity in the design of systems, components or processes appropriate to program objectives	N	
e	An ability to function effectively on teams,	N	
f	An ability to identify, analyze and solve technical problems	P	1, 2, 3, 4, 6
g	An ability to communicate effectively,	N	
h	A recognition of the need for, and an ability to engage in lifelong learning	N	
i	An ability to understand professional, ethical and social responsibilities	N	
j	A respect for diversity and a knowledge of contemporary professional, societal and global issues,	N	
k	A commitment to quality, timeliness, and continuous improvement	N	
A	The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers to the building, testing, operation, and maintenance of electrical/electronic(s) systems	P	1, 2, 3, 4, 6
B	The applications of physics or chemistry to electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry	P	1, 2, 3, 4, 6
C	The ability to analyze, design, and implement control systems, instrumentation systems, communications systems, computer systems, or power systems	N	
D	The ability to apply project management techniques to electrical/electronic(s) systems	N	
E	The ability to utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of electrical/electronic(s) systems	N	

### Outcome Assessment Tools

1. Electronics Module Senior Survey