

ETec354 Course Specifications

Catalog Information

Course Number and Title: ETec354 – Electronics for Engineering Tech III

Credit Hours: 4

Course Description: The characteristics and use of typical transducers and sensors used to monitor or control industrial processes. Study of programmable logic controllers and other microprocessor-based systems used to monitor and control industrial processes. Cannot be taken for credit by EET majors.

Prerequisites: ETEC 352

Prerequisite Outcomes:

Schedule Information

Quarter: Spring 2007

Meeting Times and Rooms

Days	Times	Instructor	Room(s)
MW	2:00-3:20	F. D. Harris	ET333
T	2:00-3:50	F. D. Harris	ET331

Lab Fee: \$10.00

Enrollment Limit: 18 per lab section

Student Resources

Student Syllabus: <http://eet.etec.wvu.edu/etec354/354sp07syl.pdf>

Course Website: <http://eet.etec.wvu.edu/etec354/index.html>

Facilities and Materials

Required Text: *Circuit Analysis with Devices* by Robbins & Miller

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

Software: None

Course Outcomes

1. Be able to analyze basic circuits incorporating operational amplifiers: Inverting amplifier; non-inverting amplifier; follower; Voltage regulator; Integrator.
2. Have experience with the 555 timer in its basic configurations.
3. Have experience with various oscillator circuits: Hartley, Colpitts, Pierce, Phase Shift, etc.
4. Know the conditions for bridge balance.
5. Have experience with Series, Shunt, and Compound DC Motors.
6. Have experience with split phase induction motors.
7. Have experience with three phase induction motors.
8. Have experience programming a microcontroller.

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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.		
b	An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology		
c	An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes		
d	An ability to apply creativity in the design of systems, components or processes appropriate to program objectives		
e	An ability to function effectively on teams,		
f	An ability to identify, analyze and solve technical problems		
g	An ability to communicate effectively,		
h	A recognition of the need for, and an ability to engage in lifelong learning		
i	An ability to understand professional, ethical and social responsibilities		
j	A respect for diversity and a knowledge of contemporary professional, societal and global issues,		
k	A commitment to quality, timeliness, and continuous improvement		
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		
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		
C	The ability to analyze, design, and implement control systems, instrumentation systems, communications systems, computer systems, or power systems		
D	The ability to apply project management techniques to electrical/electronic(s) systems		
E	The ability to utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of electrical/electronic(s) systems		

Outcome Assessment Tools