

## ECE 445 – ELECTRONICS III LABORATORY

Type (check one):                      Required:     \_\_\_\_\_                      Elective:       X  

**2005-2006 Catalog Data:**                      ECE 445. Electronics III Laboratory. (Formerly EE 445) Design projects paralleling ECE 435. Projects are proposed by the students and submitted to the instructor for approval prior to the initiation of the work. Use of engineering logbook/notebook. Prerequisite: ECE 342. Co-requisite: ECE 435. Offered in the Fall semester. *One semester; one credit.*

**Prerequisites:**                                      ECE 342

**Co-Requisites:**                                    ECE 435

**Textbook:**                                         None. However, a specific Engineering and Science Notebook (National Brand #33-610) is required.

**Other Required Materials:**                    None

**Other References:**                              None

**Instructor:**                                        Robert L. Drake, Ph.D., P.E., Professor of Electrical and Computer Engineering

**Course Objectives:**                            This laboratory course is designed to give the student more electronic design experience and to acquaint students with popular commercially available integrated circuits.

**Prerequisites by Topics:**                      1. Use of standard laboratory equipment  
2. Basic laboratory measurement techniques

**Topics:**    Topics vary with the projects selected by the student, but most will parallel the topics in ECE 435 Electronics III. There are 10 to 12 lab sessions.

**Class Schedule:**                                One 3-hour lab session each week.

**Prepared by:**     Robert L. Drake, Ph.D., P.E.                      **Date:**     August 2005

**Professional Component:  
ECE 445 – ELECTRONICS III LABORATORY**

Category (check one)	<input type="checkbox"/> Math/Basic Science <input checked="" type="checkbox"/> Engineering <input type="checkbox"/> General Education <input type="checkbox"/> Other
Design (check one)	<input type="checkbox"/> Significant <input checked="" type="checkbox"/> Some <input type="checkbox"/> None
Realistic Constraints (check all that apply)	<input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input type="checkbox"/> Sustainability <input checked="" type="checkbox"/> Manufacturability <input type="checkbox"/> Ethical <input type="checkbox"/> Health & Safety <input type="checkbox"/> Social <input type="checkbox"/> Political

**Relationship to Program Outcomes:**

Check all that apply:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs
- (d) an ability to function on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
- (i) a recognition of the need for and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice