

## **Course File Summary:**

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# **ME (593) Electromechanical Systems and Microprocessor Applications**

### **Course Information :**

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Course Title: Electromechanical Systems and Microprocessor Applications  
Code: ME 593  
Hours: Lecture: 2 Tutorial: 2 Credit: 3  
Prerequisites: ME 591  
Lecturer:  
Assistants:  
Room:

### **Grading :**

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Class Performance / Attendance	10%
Midterm # 1/ Assignments : ( 7 <sup>th</sup> week )	30%
Midterm # 2/ Assignments : ( 12 <sup>th</sup> week )	20%
Final Exam	40%

### **Course Description:**

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The course includes the following: An introduction to Mechatronics applications, electric circuits and components, semi conductors, diode rectifiers, power transistors, digital systems and circuits, actuators, microprocessors and micro controllers

### **Text Books :**

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“POWER ELECTRONIC DEVICES, DRIVERS, APPLICATIONS AND PASSIVE COMPONENTS” - B.W. WILLIAMS

### **Reference Books:**

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Kenneth H., Daniel T., “Micro controllers, Architecture, Implementation and Programming”, McGraw-Hill, 1992

### **Course Aim:**

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To deal with and apply electromechanical systems and understand microprocessor applications

### **Course Objectives:**

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- Understand the operating principles of electromechanical actuators, motors, sensors, drives and analog motion control.
- Provide an overview of the applications of microprocessors and micro controllers for smart products and process control.

### **Course Outline:**

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#### **Week No.1:**

Introduction to Mechatronics applications.

#### **Week No.2:**

Electric circuits and components.

#### **Week No.3:**

Electric circuits and components (cont.)

#### **Week No.4:**

Diode rectifiers

**Week No. 5:**

Diode rectifiers (cont.)

**Week No.6:**

Power transistors

**Week No.7:**

Power transistors (cont.) - Quiz

**Week No.8:**

Digital systems and circuits.

**Week No.9:**

Digital systems and circuits (cont.)

**Week No.10:**

Actuators

**Week No.11:**

Actuators (cont.)

**Week No.12:**

Microprocessors and Micro controllers - Quiz

**Week No.13:**

Microprocessors and Micro controllers (cont.)

**Week No.14**

The 8051 Architecture (or equivalent)

**Week No.15:**

An 8051 Micro controller Design (or equivalent)

**Week No.16:**

Final Examination

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