EEL4213 - Power Systems I

One Credits, Thirty minutes, Engineering Topic.

Instructor: Dr. Juan L Farah.

Textbook: Electromechanical Energy Devices and Power Systems. Zia A Yamayee & Juan L. Bala, Jr.

Specific Course Information:

Fundamental understanding of electrical power systems, transformers, AC circuits, DC machines, synchronous machines, and induction motors.

Specific Goals for the Course

a. Specific outcomes of instruction

Upon successful completion of this course, the student will:

1.Identify the basic components of a power system.

2.Understand the principles of electromechanical energy conversion and machinery.

3.Evaluate basic AC and DC machines and circuits.

4.Create a simple electrical generator.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

In this course the student will have to show

(a) an ability to apply knowledge of mathematics, science, and engineering (X)

(b) an ability to design and conduct experiments (simulations), as well as to analyze, interpret data (N/A)

(c) an ability to design a system, component, or process to meet desired needs (N/A)

(d) an ability to function in multi-disciplinary teams (N/A)

(e) an ability to identify, formulate, and solve engineering problems (homework) (X)

(f) an understanding of professional and ethical responsibility (X)

(g) an ability to communicate effectively (through project reports) (X)

(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context (X)

(i) a recognition of the need, and an ability to engage in life-long learning (X)

(j) a knowledge of contemporary issues (X)

(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice (X)

(l) a knowledge of probability and statistics (N/A)

Brief list of the topics to be covered

1.Electrical and Computer Engineer Students

2.Engineers and technical personnel in Industry interested in the Power System Area

3.Engineers and technical staff for familiarities with basic power systems.

GRADING:

Course Requirements	Weight
Homework	10%
Project	15%

Quizzes	20%
Midterm Exam	25%
Final Exam	30%
Overall Grade	100%

Conversion of Numerical Grade to Letter Grade

94<=A<=100	83<=B<87	68<=C<75
90<=A-<94	79<=B-<83	60<=D<68
87<=B+<90	75<=C+<79	F: Below 60