

ELEG 2053: Introduction to Electrical Engineering Course Syllabus **PVAMU, Spring, 2004**

Pre-requisites:

MATH 2043 – Differential Equations I and PHYS 2023 – Engineering Physics II.

Textbook:

Foundations of Electrical Engineering, by J.R. Cogdell, 2nd Edition, Prentice Hall, 1999.
ISBN: 0-13-092701-5.

Instructor:

Dr. Lijun Qian

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Office Hours:

TR 2:00-4:00 PM, MW 1:00-2:00 PM, and by appointment

Lectures:

TR 11:00-12:20, HMEC Room 113

Catalog Description:

(3-0) Credit 3 semester hours. Basic circuit theory, analysis of DC circuits; steady-state analysis; transformers; DC machines and induction motors; diode circuits, operational amplifiers; numbering systems, logic gates and combinational circuits.

Course Objectives:

To introduce students to the basic fundamentals of electrical engineering. Students will gain knowledge and understanding of basic DC and AC circuit theory, electronic devices and components, and digital and analog electronics. In addition, students will gain experience concerning the electrical engineering sections of the fundamentals of engineering exam.

Expected Outcome:

Upon successful completion of ELEG 2053, the student will be capable of outstanding performance on the electrical engineering sections of the fundamentals of engineering exam and be very knowledgeable of basic electrical engineering concepts.

Appeals:

Student Academic Appeals Process (undergraduate catalog, 1998-2001, pp.88-91)

Course Contents:

| <u>Chapter</u> | <u>Reading Assignment</u> | <u>Length of Time</u> |
|----------------|------------------------------------|-----------------------|
| Chapter 1 | Basic Circuit Theory | 1 week |
| Chapter 2 | The analysis of DC Circuits | $1\frac{1}{2}$ weeks |
| Chapter 3 | The dynamics of Circuits | $1\frac{1}{2}$ weeks |
| Chapter 4 | The analysis of AC Circuits | $1\frac{1}{2}$ weeks |
| Chapter 5 | Power in AC Circuits | $1\frac{1}{2}$ weeks |
| Chapter 6 | Electric Power Systems | $1\frac{1}{2}$ weeks |
| Chapter 7 | Semiconductor Devices and Circuits | $1\frac{1}{2}$ weeks |
| Chapter 8 | Digital Electronics | 1 week |
| Chapter 9 | Analog Electronics | 1 week |
| Chapter 11 | Communication Systems | 1 week |
| Chapter 16 | Induction Motors | 1 week |

Grading Policy:

The following grading policy will be used as a guide to determine academic performance:

| | |
|-------------------|------------|
| Homework | 10% |
| Quizzes | 15% |
| Exam I | 15% |
| Midterm Exam | 15% |
| Exam III | 15% |
| <u>Final Exam</u> | <u>30%</u> |
| Total | 100% |

Any deviation from the above grading policy will be discussed in advance with the class. Such deviations will be considered only in situations to provide learning enrichment opportunities for the entire class.

Assignments:

Homework and design problems will be assigned to complement each unit of instruction. Students will be required to turn in or demonstrate each assignment. Homework has to be handed in one week from the date that it is assigned. Late homework will NOT be accepted unless due to acceptable reasons (as defined by University policy).

Exam Policy:

Announced quizzes (15-20 minutes) will be administered. Exams and Quizzes are close-book and close-notes. Every student must take all exams on the assigned dates. Any student who misses an exam without a valid excuse will automatically receive zero for that exam. Make-up exams will be administered in accordance with university policy.

Ethics:

Cheating or plagiarism on assignments or exams will not be tolerated. Proven cases of ethical violations will result in a zero for the assignment/exam and possibility of further disciplinary actions in accordance with university policies.

Class Attendance:

PVAMU requires regular class attendance. Attending all classes supports full academic development of each student. Excessive absenteeism may result in a student's course grade being reduced to a grade of "F". Accumulation of one week of unexcused absences constitutes excessive absenteeism.

Attendance Policy:

See attached University Class Attendance Policy.

Assistance:

Students with disabilities who believe that they may need an academic adjustment in this class, are encouraged to contact the Office of Disability Services at (936)857-2610/2620 as soon as possible. Once you have received a letter of adjustment from the office, kindly make an appointment with me to discuss appropriate adjustments for this class.

Accreditation:

The National Accreditation Board for Engineering and Technology (ABET) established new criteria (ABET 2000) for all institutions seeking accreditation of engineering programs. The criteria for evaluation include: (1) students, (2) program objectives, (3) program outcomes and assessments, (4) professional component, (5) faculty, (6) facilities, (7) institutional support and financial resources and (8) program criteria.

Objective, program outcomes and assessment and program criteria are provided on the attachment (ABET Extent of Coverage). ELEG-2053 will be used to document the extent in which several criteria are being met within the department. Your homework, assignments, quizzes and exams will be copied and used as documentation for the ABET evaluation team.

ELEG-2053 will be used to document ABET Criteria 3 – Program Outcomes in the following categories:

- a). Ability to apply knowledge of mathematics, science and engineering
- e). Ability to identify, formulate and solve engineering problems
- h). The broad education necessary to understand the impact of engineering solutions is a global and societal context.