

SAMPLE SYLLABUS

This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class. Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be from a previous semester and are subject to change. Please refer to your instructor for the most recent version of the syllabus.

ABET Course Syllabus EEE470

1. **Course: EEE 470 Electric Power Devices**
2. **Credits and Contact Hours:** 3 Credit Hours (lecture), Topics: Engineering
3. **Course Coordinator:** Dr. V. Vittal, Professor
4. **Textbook:** J.D. Glover, M. Sarma, T. J. Overbye, *Power System Analysis & Design*, 5th Edition, Thomson Learning, 2008, ISBN 13: 978-1-111-42577-7 (includes all course software).
Supplemental materials: Canvas: EEE470/591, Power System Devices.
5. **Specific course information**
 - a. **Catalog description:** Analyzes devices used for short circuit protection, including circuit breakers, relays, and current and voltage transducers. Protection against switching and lightning over voltages. Insulation coordination.
 - b. **Prerequisites or co-requisites:** EEE360.
 - c. **Required/elective/selected elective:** Elective
6. **Specific goals for the course**

Students are familiar with power system devices and have basic skills for power-system protection.

 - a. **Outcomes of instruction:**

Students are familiar with power system devices and have basic skills for the analysis and application of power-system protection including proficiency in the application of software for power-system modeling and fault analysis
 - b. **Outcomes of Criterion 3 addressed by the course:**

(1,2) The project trains the students to develop models appropriate to a given problem using assumptions, estimates, and approximations guided by sound engineering judgement.

(1) The homework assignments help the students identify, formulate, and solve engineering problems. The lectures prepare the students to understand the mathematics and physics necessary to solve a broad range of power-system problems
7. **Brief list of topics to be covered**
 1. AC circuit and power system fundamentals (2 classes)
 2. Principles of symmetrical components (4 classes)
 3. Analysis of unsymmetrical faults (4 classes)
 4. Transient analysis of symmetrical faults (2 classes)
 5. System protection components (4 classes)
 6. System relaying principles (4 classes)
 7. Principles of power system transients (4 classes)
 8. Insulation coordination for power systems transient protection (3 classes)

Computer Usage: A project requiring the use of fault analysis software.

Laboratory Experiments: None.

Course Contribution to Engineering Science and Design:

The course involves an extensive project where the students receive a power system computer model consisting of transmission and sub-transmission systems. The students develop three types of fault-protection systems and determine the appropriate settings using short circuit software.

Person preparing this description and date of preparation: V. Vittal, K. Tsakalis, June, 2021.