

THE UNIVERSITY OF TEXAS AT EL PASO

COURSE SYLLABUS

EE4395/EE5390

Power System Analysis 2

Spring 2022

Course Information:

Classroom: Physical Science Building 222A

CRN: 22781/26373

Class Time: TR 6:30 pm - 7:50 pm

Instructor:	Eric Galvan
Office:	E328
Phone:	
Email:	egalvan4@utep.edu
Office Hours:	Thursday 7:50 pm - 8:50 pm Others: by appointment
Text:	<ul style="list-style-type: none">• Power System Analysis and Design• Authors: J. D. Glover, T. J. Overbye, and M. S. Sarma• Publisher & Edition: Cengage Learning, 6th Edition- This course requires an online platform called MindTap
References:	<ul style="list-style-type: none">• Lecture Notes provided by the instructor.
Prerequisite	<ul style="list-style-type: none">• EE 2350, EE 2351 and EE 4395/EE 5390 Power System Analysis, each with a grade of C or better and/or department approval.

Course Description: Power system analysis in steady-state conditions and fault analysis. Symmetrical faults, symmetrical components, unsymmetrical faults, and system protection.

Course Objectives and Learning Outcomes: This course provides students with a complete overview of power systems fault analysis and protection systems. Upon successful completion of this course, students should be able to:

1. Investigate and calculate subtransient fault current for a three-phase short circuit in a power system.
2. Use the symmetrical components method for analyzing unbalanced three-phase systems.
3. Develop and calculate sequence networks of loads, series impedances, transmission lines, rotating machines, and transformers.

4. Discuss and explain the difference of single line-to-ground, line-to-line, double line-to-ground, and balanced three-phase faults.
5. Calculate per-unit zero-, positive-, and negative-sequence networks to represent a three-phase system.
6. Discuss and explain basic system-protection components.

Course calendar and topics covered (Tentative):

Week 1. Introduction	Week 9. Unsymmetrical Faults (Chapter 9)
Week 2. Introduction	Week 10. Unsymmetrical Faults (Chapter 9)
Week 3. Symmetrical Faults (Chapter 7)	Week 11. Unsymmetrical Faults (Chapter 9)
Week 4. Symmetrical Faults (Chapter 7)	Week 12. System Protection (Chapter 10)
Week 5. Symmetrical Components (Chapter 8)	Week 13. System Protection (Chapter 10)
Week 6. Symmetrical Components (Chapter 8)	Week 14. System Protection (Chapter 10)
Week 7. Symmetrical Components (Chapter 8)	Week 15. System Protection (Chapter 10)
Week 8. Midterm Exam	Week 16. Final Exam: May 12 th , 2022

Grades will be given based on following distribution:

Assignments and Simulation Projects	20%
Quizzes	15%
Midterm Exam	25%
Final Exam	40%
Total	100%

Grading Scale:

A	100-90%
B	89-80%
C	79-70%
D	69-60%
F	59-0%

Power System Software: Students will use PowerWorld Simulator for assignments and projects. Each student must have the software installed on their laptop, personal computer or device.

Calculator: Basic scientific or non-programmable calculator is required for calculations. Students can only use basic scientific or non-programmable calculator during quizzes and exams. It is the student's responsibility to always have their calculator ready for in-class assignments, quizzes and exams.

Blackboard: Course materials such as lecture notes, syllabus, homework assignments, simulation projects, and announcements will be given in class and will also be available in the course blackboard.

Assignments: The homework assignments must be turned in by the due date. Late assignments will be decreased one letter grade per day late from the actual homework grade.

Quizzes: Unannounced and announced quizzes will be given at the beginning of the class. No make-up quiz will be given if you are late or absent without valid reason.

Exams: A midterm exam will be given the week of **March 8-10, 2022**

Final Exam: The final exam is comprehensive and is given in accordance with the University's Final Exam schedule, **Thursday, May 12th, 2022 7:00 pm – 9:45 pm.**

No Use of Cell Phones, Laptops, Tablets or Other Devices on Exams.

Class Participation and Activities: There will be class group and individual activities. In order to get a grade for them you must participate in the activity.

There will be No Make up for exams, quizzes, presentations, assignments, or any assigned tasks. However, in case of pressing circumstances, make up will only be allowed for students with medical reason that prevents their attendance (written notification from doctor required), military duties (notification to be provided in advance), and for other compassionate reasons. Business related activities, car problems, and over sleeping are not considered compassionate reasons.

Course Drop Deadline: The deadline to drop this course with an automatic W is **April 1st, 2022.**

Attendance: Attendance is mandatory. When absent, the student is responsible for obtaining notes, handouts, and assignments and for meeting the same deadlines as the rest of the class. Excused absences are limited to documented medical emergencies, religious holidays and UTEP sponsored and/or required activities.

Cell Phone and Laptop Policy: Cell phones are not permitted during the lecture. Laptops may be used during assignments as specified by instructor. Students are required to turn off cell phones before entering the classroom. Cell phones should be placed out of sight (like in a purse or backpack). Students should NOT receive or make any calls/text messages during class. Students using cell phones during class will be asked to leave and will receive a zero for attendance and on all group assignments completed that day.

Institutional Policies

Academic Honesty: As an entity of The University of Texas at El Paso, the Department of Electrical and Computer Engineering is committed to the development of its students and to the promotion of personal integrity and self-responsibility. The assumption that a student's work is a fair representation of the student's ability to perform forms the basis for departmental and institutional quality. All students within the department are expected to observe appropriate standards of conduct. Acts of scholastic dishonesty such as cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in the whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts will not be tolerated. Any case involving academic dishonesty will be referred to the Office of Student Conduct and Conflict Resolution (OSCCR). The Associate Dean of Students will assign a Student Judicial Affairs Coordinator who will investigate the charge and alert the student as to its disposition. Consequences of academic dishonesty may be as severe as dismissal from the University. See the OSCCR homepage at <https://www.utep.edu/student-affairs/osccr/> for more information.

Center for Accommodations and Support Services (CASS): If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

Harassment: Members of the UTEP community are protected from discrimination and harassment by State and Federal Laws. Jokes, comments of sexual nature, as well as racist comments will not be tolerated. The student that violates this rule will be sent to the Dean of Students for disciplinary action.

COVID-19 Precautions: Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID 19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org

Disclaimer: The content of this Syllabus may subject to change within reasonable limits according to instructor's discretion. Any changes will be announced in blackboard and in the class.