ELEG 55003 – Design of Advanced Power Distribution Systems
Summer 2025

TIME: **N/A** VENUE: **Online**

TEXTBOOK: **ELECTRIC POWER DISTRIBUTION SYSTEM ENGINEERING, Turan Gonen, Third Edition, CRC Press – please, do not buy the 4th edition**

INSTRUCTOR: **Dr. J. C. BALDA (3217 Bell Engineering Center, Tel: (479) 575-3008, e-mail: jbalda@uark.edu)**

OFFICE HOURS: **By appointment.**

1.0 COURSE OUTLINE

1.1 Chapter 4: Design of Subtransmission Lines and Distribution Substations (1 week)
1.2 Chapter 5: Design Considerations of Primary Systems (0.5 week)
1.3 Chapter 10: Distribution System Protection (2 weeks)
1.4 Chapter 3: Application of Distribution Transformers (2 weeks)
1.5 Chapter 9: Distribution System Voltage Regulation (1 week)
1.6 Chapter 8: Applications of Capacitors to Distribution Systems (1 week)
1.7 Chapter 13: Distributed Generation and Renewable Energy (0.5 week)

2.0 GRADING POLICY

Tests	75%
Homework Problems	25%

The first test covers Chapters 4 and 5, the second test Chapter 10, the third test Chapter 3, and finally, the fourth test covers Chapters 9, 8 and 13.

Grading system: $A \geq 90$, $90 > B \geq 80$; $80 > C \geq 70$; $70 > D \geq 50$

Cutting a test will result in a zero grade, i.e., THERE IS NO MAKE UP TEST UNDER ANY CIRCUMSTANCE. A formula sheet with only numbered equations from the textbook is allowed in each test. Drawings, equivalent circuits, solved problems ARE NOT ALLOWED on the formula sheet; failure to satisfy this will be considered academic dishonesty. As written in the UA Academic Integrity website, "As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at "provost.uark.edu/457.php". A short video is at http://www.youtube.com/watch?v=SQW_IoOhjvo&feature=youtu.be

Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor."

Please, refer to www.ieee.org/about/whatis/code.html for the IEEE Code of Ethics.

Tentative Schedule for Tests

- Test 1 should be taken on June 20, 2025, within a specific time window if using Respondus Lockdown Browser. It includes video material in the directory "Videos" under "Lecture Videos" from August 25 to September 15, 2020, inclusive (Material covered on Chapter 10 on 9/15 lecture is not included in Test 1).
- Test 2 should be taken on June 30, 2025, within a specific time window if using Respondus Lockdown Browser. It includes material on videos from September 15 to October 6, 2020, inclusive (Material covered on Chapter 3 on 10/6 lecture is not included in Test 2).
- Test 3 should be taken on July 9, 2025, within a specific time window if using Respondus Lockdown Browser. It includes material on videos from October 6 to November 5, 2020.

- Test 4 should be taken on July 17, 2025, within a specific time window if using Respondus Lockdown Browser. It includes material on videos from November 12 to December 10, 2020.

By taking the tests using Respondus Lockdown Browser, students state that (a) has only used test-approved material to answer all questions, (b) not received or provided information from any other person or student, and (c) have not made use of course websites like Chegg.

Test Content

Tests may have (a) only numerical problems or (b) a mixture of questions involving numerical problems, writing about something and/or drawing something. So, the students will be using paper to answer the various questions (and not the computer), and upon completion of the test, the students will have 15 minutes to email Dr. Balda their solutions to the various test questions as well as the formula sheet. Failure to do so will result in lower grades.

Test Rules

* Tests are closed book, closed notes.
* You can bring a formula sheet with equations from the textbook, the slides or any application note/additional note used in the course. **You cannot have solved problems, figures, graphs or any other information – only equations. The formula sheet needs to be submitted with your test solution**. Please, refer to the Academic Integrity Rules of the University mentioned above. Failure to submit the formula sheet will result in a zero grade for the test.
* By taking this test, you vouch that (a) you have only used course-approved material, (b) did not accept or provided information to other students, and (c) did not use course websites like Chegg.
* You are not allowed to have any calculator or device that can be connected to the internet. However, this option should be disabled.
* Students will have a week from the date a test is given back to ask for a grade change.

Deadlines for Homework Assignments

Homework assignment on “AC Circuits”: May 29, 2025
Homework assignment on “Distribution Substations”: June 5, 2025
Homework assignment on “Design of a Primary Feeder”: June 12, 2025
Homework assignment on “Fuse to Fuse Coordination”: June 23, 2025
Homework assignment on “Recloser-Fuse Coordination”: June 26, 2025
Homework Assignment on “Three-Phase Transformers”: July 4, 2025
Homework assignment on “Voltage Regulation”: July 12, 2025

If Using a Proctor

If you are not taking tests using Respondus Lockdown Browser, you need to identify a proctor for proctoring your tests. The proctor cannot be a family member or a friend. It can be your manager or supervisor, someone in human resources, or a testing center available at many community colleges. The role of the proctor is to provide you with a quiet room, administer the test, collect your submission with the formula sheet, and scan and email them to me. Tests will be closed book, closed notes, you can only have a formula sheet with equations from the textbook or the slides. No solved problems, no graphs.

3.0 GENERAL

Students are advised to contact Dr. Balda via email to reinforce any concept that may not be clear independent of their grades.

Any of the above rules may be changed at any time if the circumstances warrant doing so.