Electric
Power Distribution Systems
Prof. Dr. İsmail H. Altaş

www.altas.org

Electric Power Distribution Systems
Chapter 0 – Course Information

STEALING IS NOT SHARING

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Remember, **Stealing is not sharing.**

STOP PLAGIARISM

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COURSE INSTRUCTOR

Prof. Dr. İsmail H. ALTAŞ

Phone : 462 377 2971

E-mail : ihaltas@ktu.edu.tr (for regular correspondence)
           ihaltas@altas.org   (for regular correspondence)

 URL   : www.altas.org

Project, homework, etc submission: MOODLE Course site

Course e-mail address: epds@altas.org (Use to send homework etc., only.)

Student's official e-mails:
studentno@ogr.ktu.edu.tr

(It will be used to provide information about the course via the MOODLE interface.)

Topics to know before attending this course

Power Systems Basics   Topics to be learned beforehand

- AC Circuits
- Phasor notation
- Three-phase networks
- Single-phase equivalent circuit representation
- Single-line diagram
- Voltage Drop calculations
- Synchronous Generator
- Transformers
- Per-unit system
- Transmission lines (π and T Equivalent circuit models)

Contents

Topics to be covered

- Introduction to Distribution Networks
- Distribution system Planning and Automation
- Load Characteristics and power definitions
- Distribution Transformers
- Line and Cable Features
- Voltage Drop and Power Loss Calculations
- Power Distribution Networks (Radial, Branch, Ring, Interconnected)
- Cross-section calculations in Power Distribution Networks
- Capacitor Applications in Power Distribution (Compensation, power quality, etc.)

Contents

Additional topics

- Distribution System Voltage Regulation
- Distribution System Protection
- Symmetrical Components
- Short-Circuit Calculations
- Distribution Systems Overcurrent Protection
- Power Quality
- Power Flow Calculations
- Distributed Generation and Renewable Energy

Prerequisites

Although this course has no formal prerequisites, the students must have sufficient knowledge from the following 1st and 2nd year courses.

- Fundamentals of Electrical Circuits,
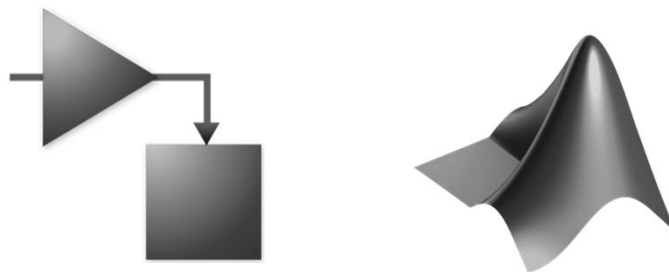- Power systems

Simulation Examples

In this course, it is aimed to do some computer-aided simulation studies.
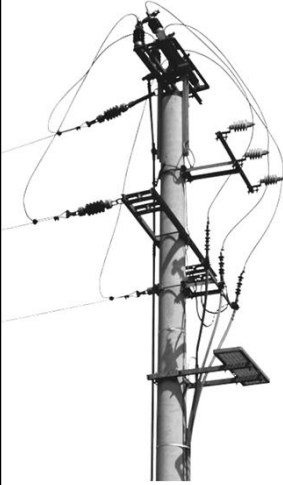
Laboratories

This course has a laboratory and will be conducted face to face. The students who take the course will be divided into groups with 3 students in each and they will do the following experiments according to the program to be prepared.

1. Three Phase Synchronous Generator And Synchronization
2. High Voltage Transmission Line Model
3. Reactive Power Compensation
4. Additional experiments will be developed within the term and they will be applied of their preparation is completed.

Information and documents about the experiments can be accessed on the personal website of the course instructor (www.altas.org). If the MOODLE system is activated, course resources will also be shared via the MOODLE interface.

Evaluation of Exams, Enforcement Rules and Dates

Assignments	:	0%	To be decided
Lab	:	20%	Will be started at 5th week
Midterm	:	30%	9th week
Quizzes	:	0%	To be decided
Final	:	50%	
Total	:	100%	

Follow the exam rules.

Books to be used as lecture notes
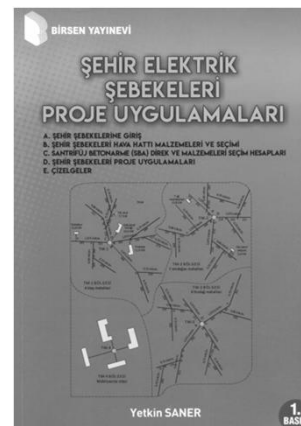
Lecture Presentation Files
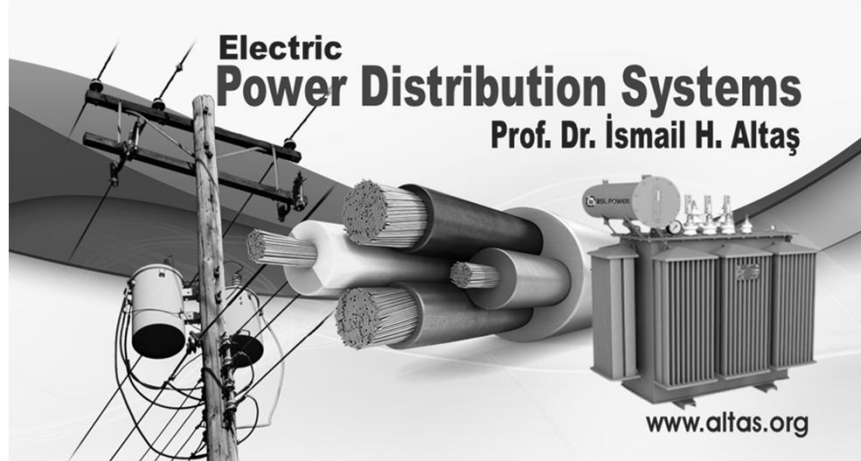
Books to be used as lecture notes
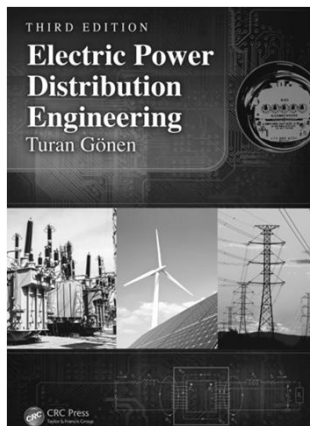
Turan Gönen
CRC Press, 2014, 3ed
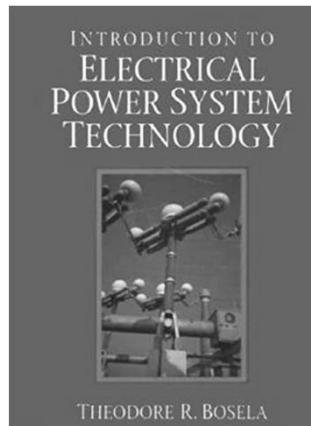
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Prentice Hall, 1997

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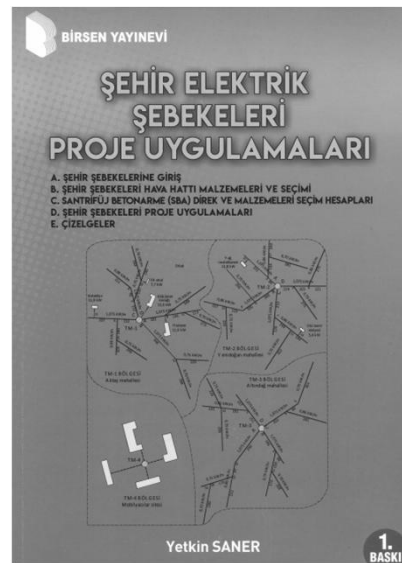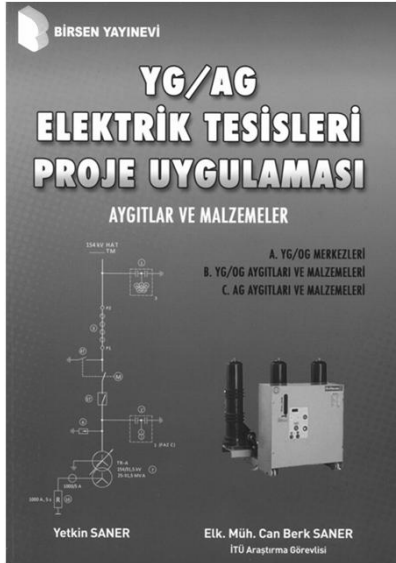Birsen Yayınevi
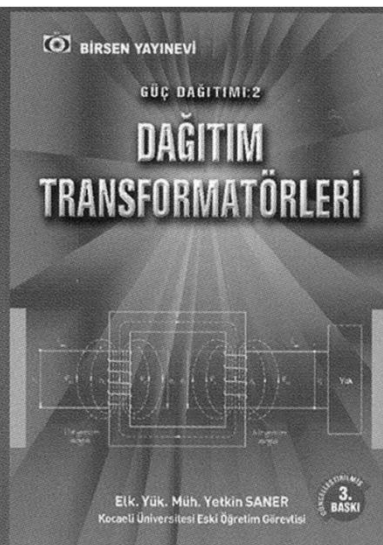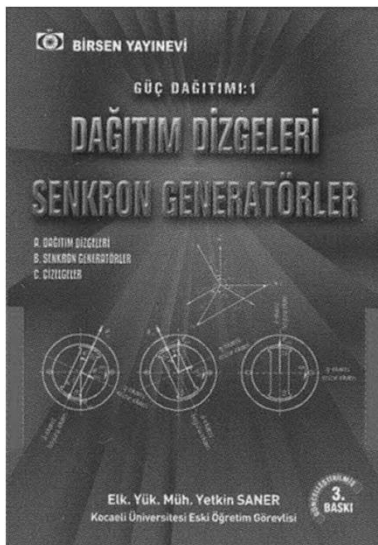
PRACTICAL BOOKS FOR ELECTRICAL ENGINEERS

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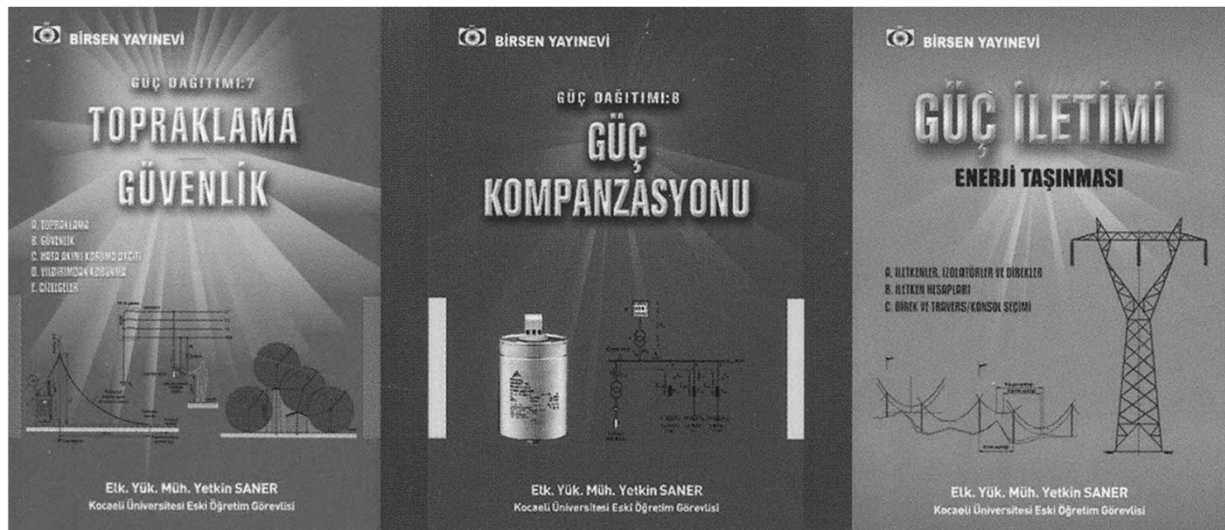
Other resources

1) Electrical Internal Installation Regulation
2) Electrical High Current Facilities Regulation
3) Project Regulations
4) Grounding Regulation
5) IEEE Red Book
6) VDE Regulations
7) IEC Regulations

I wish you a successful academic term.