Energy Conversion and Power Systems EEE210

Francis Ting

Xi'an Jiaotong-Liverpool University

Email: *toting@xjtlu.edu.cn*
Room: EE324

Overview

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Objectives

- To provide students with an introduction to the components and composition of an electric power system.
- To consider the primary energy sources and the way in which power is delivered to the consumers.
- Equipped students of diversified background (TE, EE, DMT, EST) with the fundamental knowledge of power system.

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- 44 hours of private study

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Learning Outcomes

- Know why power systems are necessary and how they are organized in terms of various functions
- Understand the importance of the continuous balance between generation, load, and losses for complex power, and know the consequences of imbalance network
- Appreciate the connection between real power flow and phase difference across a line and also of reactive power flow and voltage magnitude difference

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- Understand the application of machine and transformer equivalent circuits to power system analysis and how the p.u. system simplifies calculations involving transformers
- Know why synch machines are used in thermal and nuclear power stations
- An understanding of how alternative energy sources have developed over recent years. Knowledge of wind, wave, and solar energy sources, their energy density and its effect on land usage
- Acquire the knowledge of transmission system, how it can be represented in circuit terms

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Chapters

- Introduction
- Fundamentals
- Power Transformers
- Transmission Line Parameters
- Power Distribution

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Assessment

- Final Exam – 80%
- Coursework – 10%
- Midterm Exam – 10%

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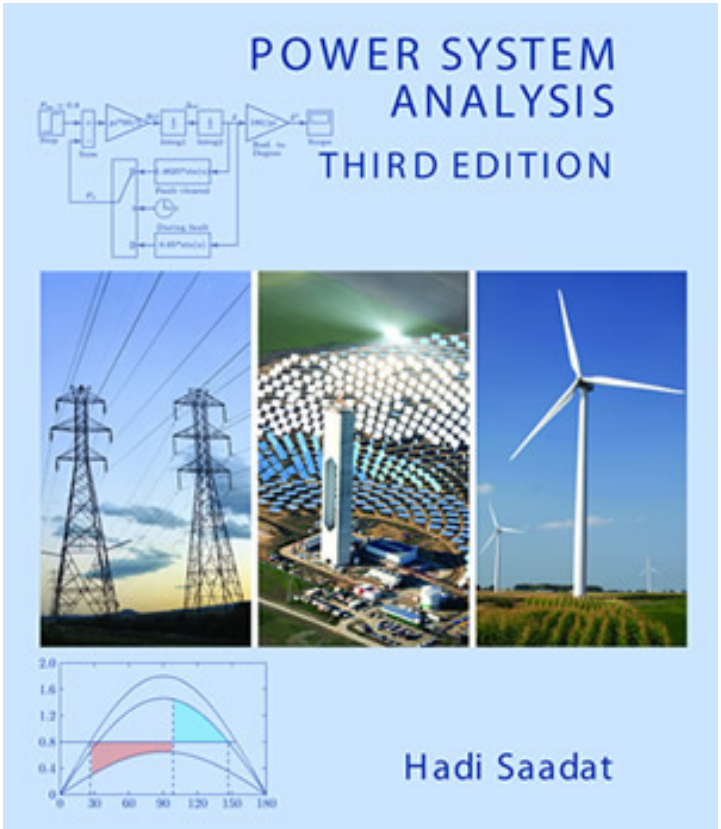
Textbook

Hadi Saadat (2011)

Power System Analysis Third Edition

PSA Publishing



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- Weekly attendance, starting from Week 1
- Attendance is obligatory to avoid missing of any important details
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- Attendance is a key to excel in your study
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Consultation

- (This will be informed to students in class)
- For other time, do make an appointment

The End