

EECE421 Power System Analysis

Fall 2017

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Electrical Engineering and Computer Science

Howard University

Textbook

⌘ Text book:

⌘ *Elements of Power System Analysis*, 4th Ed (or higher). William Stevenson, Jr.



Want to Read

Rate this book



Elements of Power System Analysis (Mcgraw Hill Series in Electrical and Computer Engineering)

by William D. Stevenson

★★★★★ 4.11 ·  Rating Details · 55 Ratings · 3 Reviews

The approach is to develop the thinking process of the student in reaching a sound understanding of a broad range of topics in the power-system area of electrical engineering. Another goal is to promote the student's interest in learning more about the electric-power industry. The objective is not great depth, but the presentation is thorough enough to give the student the ...more

Hardcover, 436 pages

Published March 1st 1982 by Mcgraw-Hill College (first published January 1st 1975)

[More Details...](#)

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Information

⌘ Specific course information

- ☑ The course covers **broad subjects** of power system basics including voltage regulations, transmission line impedance and capacitance, transmission line voltage and current behaviors, as well as some **advanced subjects** of load flow studies and computation techniques and economic operation of power system.
- ☑ prerequisites or co-requisites: EECE203
Fundamentals of Circuit Theory

⌘ An elective course for Electrical Engineering program.

Topics (Chapter Numbers follow Stevenson's book)

- ⌘ 1. General Background of Power Systems
- ⌘ 2. Basic Concepts
- ⌘ 3. Transmission Line Series Impedance and Capacitance
- ⌘ 4. Transmission Line Current and Voltage Relations
- ⌘ 5. System Modeling
- ⌘ 6. Advanced Topics: Network Calculations, Load Flow, Economic Dispatch, Symmetrical Components

Topics by Illustration

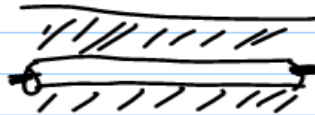
1. General Background

Energy
Conversion
($X \rightarrow E$)

Transport

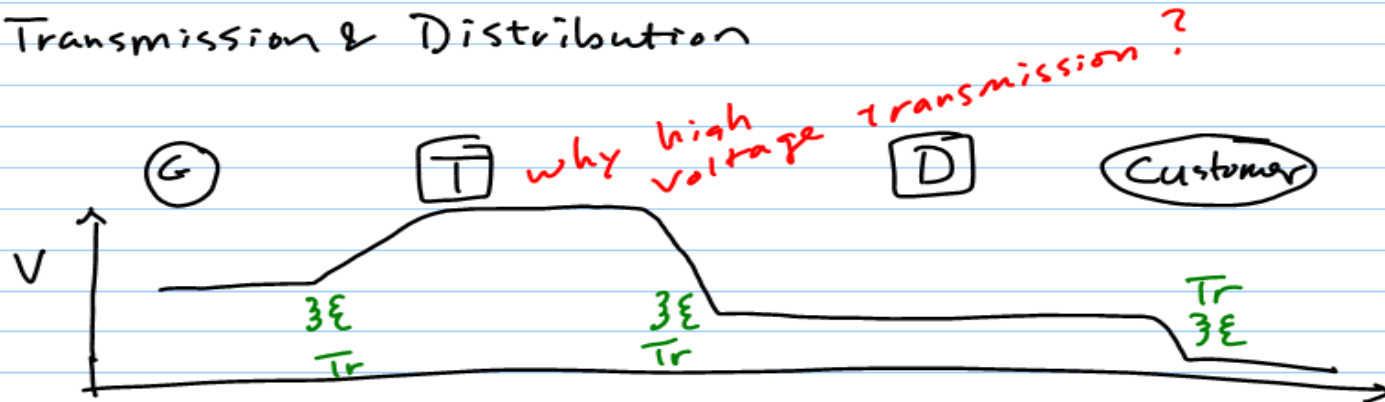


{ AC
DC



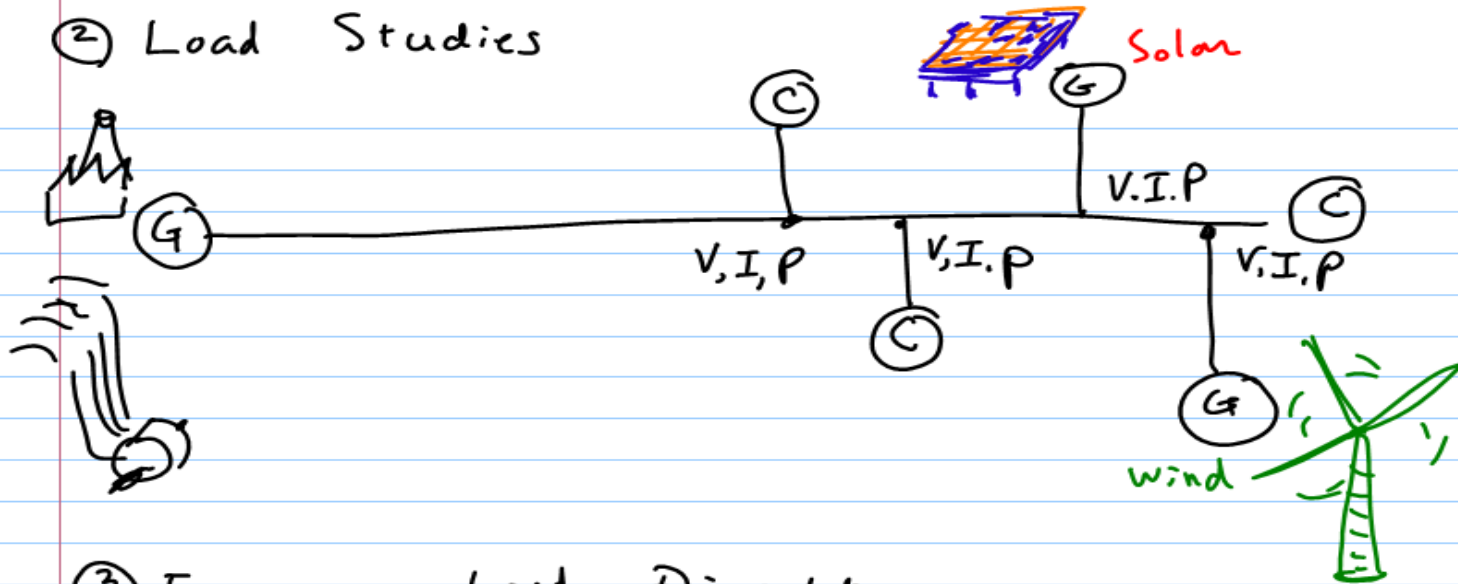
2. Subjects

① Transmission & Distribution

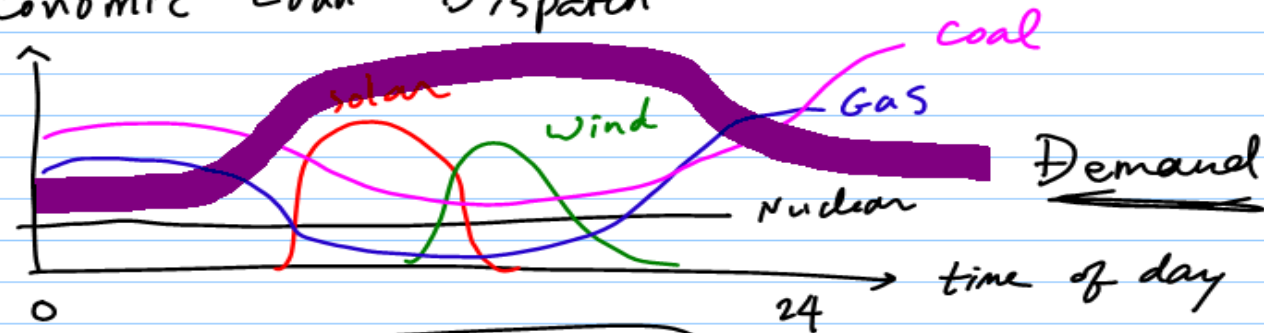


Topics by Illustration

② Load Studies



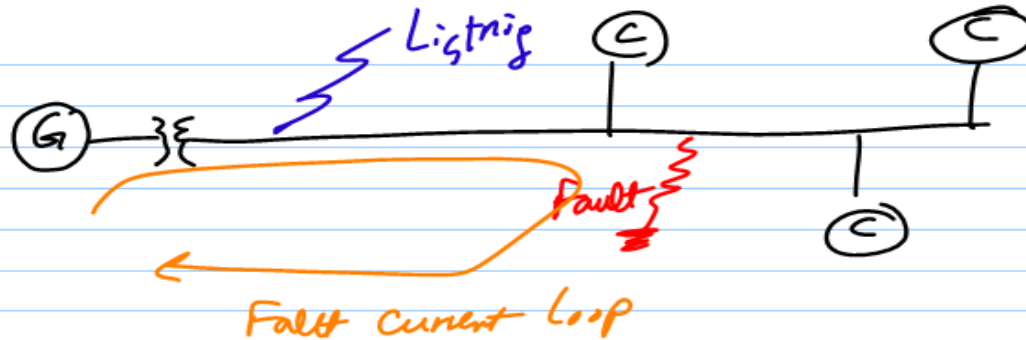
③ Economic Load Dispatch



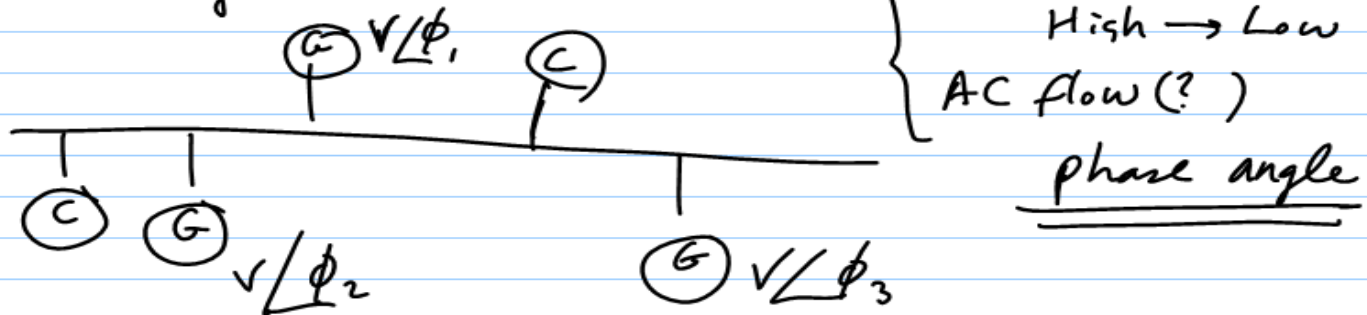
What combination is best?

Topics by Illustration

③ Fault Calculation



④ Stability Studies



* Start with Fundamental Concept. Next Class

Grading

- ⌘ 2 Exams - 20% each (40%)
- ⌘ 1 Final Exam – 20%
- ⌘ **Class Activities – 20%**
- ⌘ Assignment – 20%
- ⌘ Attendance – Extra 5% (On-time arrival only)
- ⌘ Grades:
 - ⊞ A: 90% or above
 - ⊞ B: 80 – 89 %
 - ⊞ C: 70 - 79 %
 - ⊞ D: 60 – 69 %
 - ⊞ F: 59% or below

Class Schedule (Tentative)

⌘ August:

- ☒ 1. Introduction

⌘ September:

- ☒ 2. Basic Concept
- ☒ 3. Transmission Line Impedance

⌘ October

- ☒ 4. Transmission Line capacitance
- ☒ 5. Transmission Line Current & Voltage Relations

⌘ November

- ☒ 6. System Modeling
- ☒ 7. Network Calculation
- ☒ 8. Load Flow

⌘ December

- ☒ Final Exam