

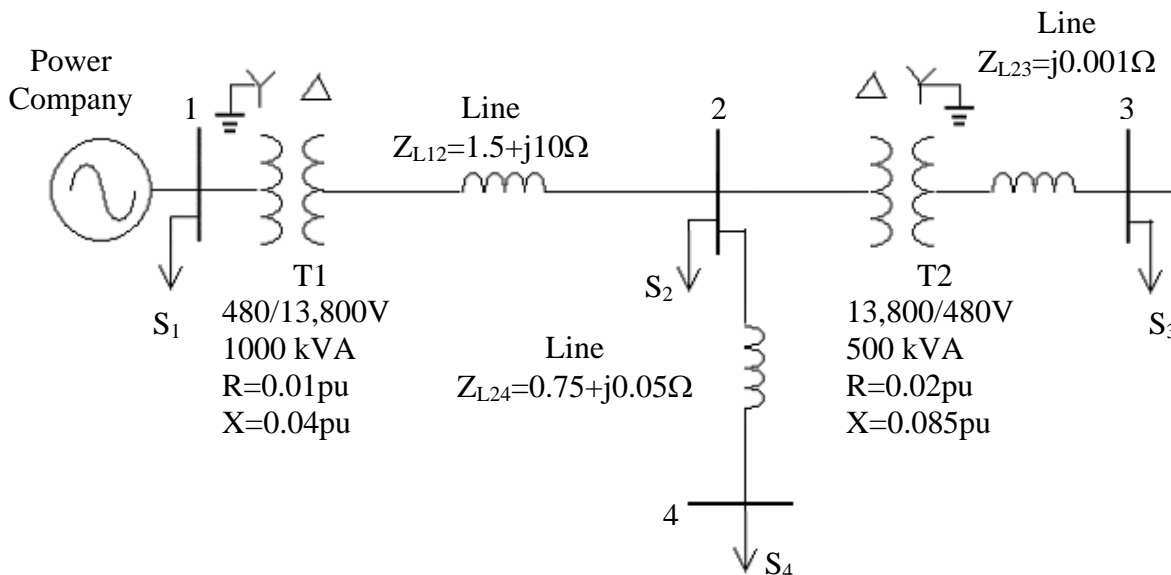
EE341 Course Project

Part A: Use **Matlab** to analyze the following problems

Part B: Write a **C or C++ program** to solve the problems

Assume the load at bus 1 (S_1) is 1000kVA at power factor of 0.85 lagging, at bus 2 the load (S_2) is 1000kVA and power factor of 0.8 lagging, at bus 3 the load (S_3) is 500kVA and power factor of 0.9 leading, and the load at bus 4 (S_4) is 1.5MVA and power factor of 0.9 leading. Assume the power company voltage is at 460V (line-line) and remains fix under the loads.

1. Compute voltage at bus 2 and 3 and the active and reactive power needed to be supplied.
2. Determine what needs to be done to make the voltage at bus 2 within 3% of the rated and at bus 3 within 5% of the rated values.
3. Compute the active and reactive power needed for prob. 1 and prob. 2. Analyze your results.
4. Attach your program as an appendix. Your program should be documented.



Note:

1. Projects will be performed by a team of two students
2. **Individual report** needs to be submitted by each team member. No electronic submission will be accepted (do NOT send as e-mail attachments).
3. Part A (Matlab simulation) is Due on **Thursday, May 26th**.
4. Part B (C programming) is Due on **Wed. of Final Exam week**.

Project Report Requirement

Part 1 – Cover page, with your name first and your partner's name second

Part 2 – Introduction/objective of this project (show your understanding)

Part 3 – Procedures (describe the algorithm with words and equations; flow chart illustration)

Part 4 – Sample calculations (plug in number and calculate for one iteration)

Part 5 – Results and conclusions (table your results)

Part 6 – Appendix: the computer programs.