Course (Catalog) Description:
High-voltage transmission line electric design; conductors, corona, RI and TV noise, insulators, clearances; DC characteristic, feeder voltage drops, and capacitors.

Textbook:

Instructor: Anamitra Pal, Assistant Professor

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Prerequisites:
EEE 470 or equivalent.

Course Objective:
Deepening the knowledge of electrical systems, energy conversion technologies, and the use of computer tools to assist in the understanding of complex engineering problems.

Course Topics:
1. Introduction and Power Plants
2. Basic components of electric system
3. Transmission line towers, clearances, loading,
4. Insulators and insulator pollution
5. Transmission line construction
6. Transmission line inductance and resistance
7. Transmission line capacitor application
8. Long transmission line and equivalent circuit
9. Transmission line generated electric and magnetic field
10. Corona Discharge at AC and DC transmission line
12. Lightning Phenomena
13. Lightning Protection Shielding
14. Lightning Protection Back flashover
15. Substations
16. Sub-transmission and distribution
17. Distribution System Components
18. Distribution system automation and Smart Grid
20. Cables & Voltage Drop Calculation
21. Transmission Lines & Transformers
22. Voltage regulators
23. Application of Capacitors on Distribution feeders.
24. Distribution Protection
25. Flexible AC transmission
26. HVDC Transmission

**Homework:**
The homework will be posted on the course website. It needs to be submitted by the due date for attainment of full points. Students may work together on the homework, but copying is unacceptable: the ASU Academic Integrity Policy (AIP) is incorporated herein by reference. [https://provost.asu.edu/academic-integrity](https://provost.asu.edu/academic-integrity)

**Grading:**
“Standard” scale with ± using 90-100 "A", 80-90 "B", 70-80 "C", etc.

Percentages (tentative):
- Homework: 20%
- Project: 25%
- Midterm Exam: 25%
- Final Exam: 30%

Email: Important information regarding the course may be sent to the students via emails.

**Help:**
For technical support, use the Help icon in the black global navigation menu in your Canvas course or call the ASU Help Desk at +1-(855) 278-5080. Representatives are available to assist you 24 hours a day, 7 days a week.

**Conduct:**
Thank you in advance for adhering to the ASU Student Code of Conduct and preventing disruptive classroom behavior, such as cell phone ringing, arriving late to class, irrelevant side conversations, and inappropriate.