ECE 736: Power System Stability and Control

Spring 2024

Lecture Time: Tuesday & Thursday 11:45 am– 1:00 pm
Room: MRC 313

Instructor Information

• Instructor: Dr. Aranya Chakrabortty
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• Office Hours: Monday 3:00 – 5.00 pm, or by appointment

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Syllabus/Course Content:

1. Review of linear system theory and stability concepts
2. Small-signal dynamic models of power systems
3. Power system oscillation analysis and control
4. Transient stability of synchronous machines, Equal-area criterion
5. Synchronous machine modeling and simulation
6. Power System Stabilizer (PSS) design
7. Nonlinear control designs for transient stabilization
8. Voltage stability and load models
9. System identification and machine learning applications in power systems using PMU data
10. Course project on studying power system stability with penetration of large-scale wind, solar, and energy storage