EE 742 – Power System Dynamics, Stability and Control

Instructor: Dr. Y. Baghzouz
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Office Hours: Tuesday and Thursday: 10:30-12:30 and 2:00-2:30
Wednesday: 11:00-12:00


References:
4. IEEE Transactions on Power Systems

Pre- and Co-requisites:
Pre-requisite: undergraduate electric machines and power systems course

Course Content:
1. Introduction to Power Systems
   a. Overview/Introduction
   b. Power System Components
   c. Steady-State Analysis
2. Power System Dynamics
   a. Wave phenomena
   b. Electromagnetic phenomena
   c. Electromechanical dynamics – small disturbances
   d. Electromechanical dynamics – large disturbances
   e. Wind power
   f. Voltage stability
   g. Frequency control
   h. Stability enhancement
3. Advanced Topics in Power System Dynamics
   a. Advanced Power System Modeling
   b. Steady-State Stability of Multi-Machine System
   c. Power System Dynamic Simulation
d. Power System Model Reduction – Equivalents

Computer Usage: PSCAD

Tests:

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<tr>
<td>Test 1</td>
<td>TBA</td>
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<td>Test 2</td>
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<td>Homework</td>
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<td>Final</td>
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Total | 100 Points |

Grading:
A ≥ 80 > B ≥ 65 > C ≥ 50 > D ≥ 35

Notes:
- Parts of the tests and final exam will be done at home.
- There will be no make-up tests.
- Class attendance and participation is highly encouraged.

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**Missed Class(es) / Student**

As a general rule, a student missing a class or laboratory assignment because of observance of a religious holiday shall have the opportunity to make up missed work. Students must notify the instructor of anticipated absences by the last day of late registration, January 28, 2008, to be assured of this opportunity. Faculty may give students an additional week, but are encouraged to set a clear deadline. NOTE: Students who represent UNLV at any official extracurricular activity shall also have the opportunity to make up assignments, but the student must provide official written notification to the instructor no less than one week prior to the missed class(es).

**UNLV Writing Center**

One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student’s Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. [http://writingcenter.unlv.edu/](http://writingcenter.unlv.edu/)