ECG 740 – Computer Analysis Methods for Power Systems

SPRING 2013

Instructor: Dr. Y. Baghzouz
Office Room # TBE - B320
Tel. # 895-0887
Fax # 895-4075
Email address: eebag@ee.unlv.edu
Book Title: J.J. Grainger and W.D. Stevenson, Jr., Power System Analysis, McGraw-Hill, 1994.
References:

1. **Power system analysis and design / J. Duncan Glover, Mulukutla Sarma, Boston PWS Pub., 1994**
2. **Computer analysis methods for power systems / G.T. Heydt,** Macmillan Pub. Co, 1986.
3. **Computer modeling of electrical power systems / J. Arrillaga and N.R. Watson, John Wiley, 2001.**
4. **IEEE Transactions on Power Systems**
5. **IEEE Transactions on Power Delivery**

Course Content:

- Review of basic concepts (including transformers, transmission lines and generators)
- The Admittance Model and Network Calculations
- The Impedance Model and Network Calculations
- Power Flow Solutions
- Symmetrical Faults
- Symmetrical Components and Sequence Networks
- Unsymmetrical Faults
- Z-bus Methods in Contingency Analysis
- State Estimation of Power Systems
- Economic dispatch and unit commitment
- Introduction to power system stability.

Tests, Homework, Projects

	Subject	**Value**
Test 1	Review, Impedance& admittance models, power flow	20 Points
Test 2	Symmetrical and unsymmetrical faults	20 Points
Final Test	Power flow, faults, contingency analysis, state estimation, economic dispatch.	30 Points
Projects	TBA	30 Points
Homework	TBA	30 Points
Total		**130 Points**

Grading:
$A \geq 110 > B \geq 90 > C \geq 75$

Notes:

- Late homework will not be accepted
- There will be no make-up tests
- Class attendance and participation is highly encouraged
- EasyPower software is to be used for power flow and fault analysis.