San José State University
Department of Electrical Engineering
EE189 Special Topics in Electrical Engineering –
Power Systems (Fall 2011)

Instructor: Ping Hsu
Office Location: ENG-257
Telephone: (408) 924 3902
Email: Ping.hsu@sjsu.edu
Office Hours: M: 12:00-14:00, T: 14:30-16:30, W: 16:20-17:20
Class Days/Time: MW 15:00 ~ 16:15
Classroom: ENG-331
Prerequisites: Engineering Senior standing

Course Web Page: [sjsu.desire2learn.com](http://sjsu.desire2learn.com)  Usernames are generally in the form of firstname.lastname. The initial password is your 9 digit SJSU ID number. For more info, see [www.sjsu.edu/ecampus/students/D2L_students/](http://www.sjsu.edu/ecampus/students/D2L_students/)

All course handouts and grades information will be posted there.

Course Description

This course introduces basic concepts in power systems including: complex power, power factor correction, power quality, power flow analysis, grid steady state and transient stability, fault analysis, and integration of renewable energy. The course also introduces theory of operation and modeling of common components in power system such as transformers, transmission lines, and synchronous generators.

Course Goals and Student Learning Objectives

Course Topics
- Three-phase circuits
- Complex power
- Power factor correction
- Modeling of transmission lines
- Transformer theory and modeling
- Per-unit system analysis
- Solution of power flow problem
- Voltage regulation and generation control
- Transient stability and swing equation.
Course Learning Objectives

Upon successful completion of this course, students will be able to:

1. Determine voltage, current, power, reactive power of a three-phase circuit
2. Use per-unit system to model a power system.
3. Calculate transmission line parameter based on simplified model.
4. Determine necessary condition for maintaining voltage level.
5. Formulate power flow problem for solution by numerical methods or by software
6. Formulate transient stability problem for solution by software
7. Formulate fault analysis problem for solution by software

Required Texts/Readings


Other equipment / material requirements

Student version of Power World and PSCad. Both are free and can be downloaded from:

https://pscad.com/products/pscad/free_downloads/

Classroom Protocol

Students are expected to participate actively in class. Students will turn their phones off or put them on silent mode while in class. They will not answer their phones in class.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic calendar web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/.

Assignments and Grading Policy

- Homework assignment including computer simulations 50%
- One midterm exam 25%
University Policies

Academic Integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The University’s Academic Integrity policy, located at http://www.sjsu.edu/senate/S07-2.htm, requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU’s Academic Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the Disability Resource Center (DRC) at http://www.drc.sjsu.edu/ to establish a record of their disability.
## EE198 / Fall 2011 Course Schedule

(For reference only)

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<th>Table 1 Course Schedule</th>
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