

28<sup>th</sup> August 2009

**Missouri University of Science & Technology**  
Electrical and Computer Engineering  
Rolla, MO 65401

Dear Student,

Welcome to EE 209 (LAB 3C), Power System Design and Analysis Laboratory.

Your instructor (TA) for this course is Venkata Anand Kishore Prabhala email: [vkpzvf@mst.edu](mailto:vkpzvf@mst.edu). office location: 113 ERL. The course meets in EECH 107 between 10:00 am and 11:50 am on Monday. Use of email for comments and questions is encouraged. Dr Badrul Chowdhury is the lab coordinator and Dr Kurt Kosbar is Asst Chair of Laboratories.

The textbook for this course is Power System Analysis and Design, Fourth Edition by J Duncan Glover, Mulukutla S Sarma and Thomas J Overbye. All the handouts for experiments are posted in blackboard well in advance. The pre-requisite for this course are El Eng 153 with a grade of "C" or better and passing grade on the El Eng Advancement Exam II, El Eng 207 is a co-requisite. Students who have failed to complete the prerequisite courses, or are not enrolled in corequisite courses, may be dropped by the instructor.

**Course Objectives:**

1. Expose students to automated measurements of 3-phase power,
2. Learn use of open-circuit and short-circuit tests to determine transformer characteristics,
3. Determine synchronous machine characteristics, and synchronization of machine to the power line voltage and frequency,
4. Learn to design solutions for power system problems.

The grading measures of this course are attendance/participation (includes quizzes and prelabs) (20%), lab reports (60%), project or formal report (20%). Most of these require using a computer. The following minimum scores guarantee the following grades: 90% A, 80% B, 70% C, 60% D. These cut-offs may be adjusted downwards (i.e., an 89% may be declared to merit an A, but an 91% is ALWAYS guaranteed an A). To see a list of what can be expected from the TA this semester you may visit <http://web.mst.edu/~kosbar/labs/expectations.html>

Once again I welcome you to EE 209 (LAB 3C), Power System Design and Analysis Laboratory. Hope this course prepares you with basic design tools for power system analysis along with lots of fun. Have a nice semester.

Venkata Anand Kishore Prabhala  
Instructor (TA), EE 209 3C Power System Design and Analysis Laboratory.  
ERL 113 [vkpzvf@mst.edu](mailto:vkpzvf@mst.edu)

## General Instructions for lab:

- Read the experiment before the class;
- Lab reports must be written individually;
- All lab reports should be electronically processed in .doc format as a single document using a computer. The hard copy of lab report as well as the electronic copy (**.doc format**) needs to be submitted. The hard copy will be used for grading while the electronic copy will be stored in a database for the class. The hard copy and the electronic copy of the labs must be the same report, including diagrams. The hard copy will be submitted in lab while the electronic copy should be emailed to the TA as an attachment. The subject of the email should be EE209CLabReportN (N is the lab number). The name of the lab report (MS Word file) should be as the following:  
“EE\_209\_3C\_Prabhala\_FS\_2009\_Report\_N\_XXX.doc” (N is the lab number, XXX is your last name)
- You will need to write the formal report(s) for this lab using a word processing software package. You must submit both a hard copy of this report, and an electronic copy of your work by e-mail. The electronic version must be in a Microsoft Word 2003 (.doc) format. The Microsoft Word software package is available on campus computers. You may also generate files in this format using a number of other software packages, including the "Open Office" software suite (which is freely available, and runs on many different operating systems). The department has many years of old reports on file, and your report may be checked against this database, along with a number of other sources, for possible plagiarism, or other intellectual property right violations. Your report will be added to the database. Reports in this database may be supplied to accreditation agencies, to assist them in evaluating the quality of our academic program;
- Each lab report(including hard copy and e-copy) is due at **THE BEGINNING** of next class;
- All late submission will result in deduction of points. You will lose 10% for every day that you are late up to 5 business days (i.e. not including weekends or holidays). Reports will not be accepted after 5 days (i.e. will be given a 0);
- Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor;
- Students are allowed to miss up to two labs, but the work must be made-up at a time which is mutually convenient for the instructor and the student;
- If you have concerns about this course, I would appreciate you letting me know, so I can have a chance to address the issue. If you are dissatisfied with my reply, or feel uncomfortable approaching me for some reason, please contact the faculty laboratory coordinator for this class, Dr. Badrul Chowdhury, in room 235 of the EE building ([bchow@mst.edu](mailto:bchow@mst.edu)), or the ECE

Associate Chair for Laboratories, Dr. Kurt Kosbar, in room 227 of the EE building ([kosbar@mst.edu](mailto:kosbar@mst.edu));

- Attendance is required. Unexcused absences will result in reduction of grades. The excuse must be communicated to the instructor **PRIOR TO** the absence. For further detail on attendance policy see the web page <http://web.mst.edu/~kosbar/labs/expectations.html>;

### **Format for lab report write-up**

1. Headings include
  - a. Name of the experiment.
  - b. Lab section name and Student Name
  - c. Date on which the experiment has been done.
2. Objective or the aim of the experiment.
3. Procedure, including the steps that you have taken to achieve the objective of the experiment, and all the problems if any.
4. Tabular columns if any.
5. Calculations.
6. Graphs, attached with both the axis labeled.
7. Analysis of data and/or discussion of results.
8. Conclusions.
9. Make sure you have solved ALL the problems stated in the manual.
10. Email me your report by the due time.

### **Safety Quiz:**

Read 'SAFETY RULES AND SUGGESTIONS' (page i-3~i-8) on 'introductory pages' for the safety quiz in the class. A lab safety quiz will be given at the beginning of the second lab period. This section is covered in the sections of the safety rules and regulations, electric shock hazards and electrical safety. Each student must score at least 90% on the safety quiz. If a student misses more than one question, he/she must take the exam by the following lab period. The ECE department rule is that, failure to pass with the score of 90% or better in three attempts means that the student will be dropped from the course for the current semester.

All students are responsible for knowing, and following, the rules given on the web page:  
<http://web.mst.edu/~kosbar/labs/expectations.html>

You are requested to get yourself familiarized with the following:

- **Academic Alert System:** <http://academicalert.mst.edu>  
The purpose of the Academic Alert System is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.
- **Academic Dishonesty:** <http://registrar.mst.edu/academicregs/index.html>  
Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage.
- **Classroom Egress Maps:**  
Please familiarize yourself with the classroom egress maps posted on-line at:  
<http://registrar.mst.edu/links/egress.html> .
- **Disability Support Services:** <http://dss.mst.edu>  
Disability Support Services is located in 204 Norwood Hall. Their phone number is 341-4211 and their email is [dss@mst.edu](mailto:dss@mst.edu).

*"If you have a documented disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need to request that the Disability Services staff send a letter to me verifying your disability and specifying the accommodation you will need before I can arrange your accommodation."*

- **LEAD Learning Assistance** (<http://lead.mst.edu>)  
The Learning Enhancement Across Disciplines Program (LEAD) sponsors free learning assistance in a wide range of courses for students who wish to increase their understanding, improve their skills, and validate their mastery of concepts and content in order to achieve their full potential. LEAD assistance starts no later than the third week of classes. For more information, contact the LEAD office at 341-4608 or email [lead@mst.edu](mailto:lead@mst.edu).