Part 1: Course Information

Instructor Information

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Course Objectives

Objectives of the course include research, analyses, and simulations relating to various design and operational aspects of electric power systems. Requirements include; formal documentation and presentation of the results. The focus will be about current issues and problems on all major sub-systems within the electric power systems, particularly in the area of electric distribution systems facing a number of current and interesting challenges. All tasks relating to research, project planning, simulations, preparation of formal report, and final presentation of the results are divided and performed by team member. Emphasis is placed on proper research, problem definition, planning, design proposals for solutions, written and oral communication skills, working with others in a team environment, and effective utilization of available resources.

Prerequisite course (s);

- EEE 192A Graded (For 192B only).
- EEE 142, or EEE 144 Graded.
- GWAR Certification before Fall 09, or WPJ score of 70+, or at least a C- in ENGL 109M/W

Prerequisite by Subject(s);

- Electrical circuits theory including three-phase electrical circuits and magnetically couple circuits.
- Synchronous generator and motor.
- Symmetrical components and application in power systems.
- Power distribution, including substation basic hardware.
- Voltage regulation and reactive power control.

Textbook & Course Materials

Recommended Texts & Reading Material

- There is no specific textbook

- IEEE or other technical publications related to the project
- Other readings may be recommended as needed

Part 2: Course Requirements

Group and member responsibilities:

- Team members work effectively with one another, sharing the workload and Responsibilities,
- The project team is effectively managed by the team's elected (or assigned) project leader,
- The project team meets at least once weekly to review progress, to update the schedule and work plan. A log for member/tasks for each member as well as the group should be maintained to keep track of members' assignments and progress
- The project team meets weekly (class/lab time, or by arrangements) with the faculty adviser, providing accurate status on work in progress and the team's schedule. Progress, new plans or changes are reviewed and discussed. (e.g. for each member, a single sheet file in Word.doc explaining the tasks done for the past week and tasks for the following week will be reviewed by the instructor)
- Tasks and assignments follow the team's management plan, including the work/task breakdown structure for team members and their schedules,
- The project team implements an effective quality assurance process. For Example; all work products are formally reviewed and approved by the group prior to submission,
- All team members demonstrate an understanding of the overall process, responsibilities of other members as well the engineering principles used and any simulations performed.

Structure and Format requirements of the report:

a) Structure:

The main report should be 25-45 pages (for font size/type and other details refer to "Format" requirements below), in editable electronic format using MS Office software products, containing the following major sections;

- Title page, including names of authors, course name and number and date
- Abstract; one paragraph – 1 page (less than 200 words), containing a "high level" (very brief!) description of "what the project is about", "how it was

done" (concepts used, analyses, simulations, etc.)', and "results and conclusions arrived at".

- Introduction; (5 - 10 pages), introducing the project, the backgrounds, objectives, theoretical concepts, and a brief description of the following sections of the report.
- Body of the report; (10 – 15 pages, includes several sub-sections), this is main part of the report containing sub-sections on; approach, theoretical analyses, computer simulations; discussion/explanations about expectations, difficulties, and tabulated results and conclusions.
- Conclusions and Summary; (5 – 10 pages), discussing the results and if they agreed with the theories/expectations, restating the main conclusions/results drawn from the project, recapping any problems/difficulties, and finally any recommendations/suggestions for future work/research.
- References; (5 – 10 pages) stating references to formulas, pictures, quotes, discussions, programs/software used, and other information obtained for the report.
- If needed, additional background information, theory, mathematical proofs, (up to several pages in addition to the 25-40 pages for the main report) may be added at the end of the report under section called "Appendices".

b) <u>Format:</u>

The format requirements for the report are as follows;

- Font size should be 10 pitch,
- Font type should be "Times New Roman",
- Justified to align text to both "left" and "right",
- No scanned diagrams are allowed,
- All diagrams such as; single line, 3 line, schematics, circuit diagrams, flow charts, etc. MUST be original and make in MS Visio format. A directory of all Visio formatted files of the diagrams in the report must be submitted with the report.
- Number of pictures (originals or down loaded) in the report is limited to 8,
- For down loaded pictures, proper reference and the link to the picture must be provided.
- MS Word "Equation" feature must be used for all formulas and/or any mathematical relations.
- All derivations (or sources) for the formulas or relations must be provided.
- All formulas or mathematical equations must be numbered.

<u>Presentation requirements:</u>

- Presentations should be prepared in MS Power Point format,
- Each team will have 15-20 minutes for oral presentation (3-5 minutes for each member), with an additional 3-5 minutes to answer questions,
- Every member of the team must participate and have a part in the oral presentation,

Course Structure

- Lectures and Meetings with the instructor.
- Teams must submit a weekly progress report, which includes a summary page as well as individual reports on tasks performed by the team members.
- Preliminary and Final Team Project Reports.
- Preliminary and Final Team Project Presentations.

Major Objectives of the course:

Introduce and familiarize the students with concepts and help them gain some experience in the following:

- Planning, investigation, problem identification, and proposals or design recommendations for possible solutions on current issues, concerns, and challenges relating to various design and operational aspects of electric power distribution systems,
- Teamwork, division of tasks among the members, and utilization all available resources for proper management of a team project,
- Analyses and/or simulations to complement/verify assertions or projections found by research or investigation,
- Formal documentation of the proposals or recommendations obtained from research, investigations, analyses, and simulations into a technical report with prescribed format,
- Formal team presentation of the technical report to an audience consisting of technical reviewer and other professionals.

Part 3: Tentative Activity / Schedule

Week	Activity	Comments
1,2,3	Introduction, syllabus review, requirements and policies, Formation of teams (3-5 members / team), topics proposed by instructor, Proposals & plans for the project and responsibilities of team members presented Outline of member tasks, programs, sources, etc. for approval	Leaders identified, topics may be assigned Project approval by instructor
4-7	Progress Report and documentation on tasks performed by members	
8,9	Midterm Progress Review by the instructor	15 min preliminary presentation by each team
10	Progress Report and documentation on tasks performed by members	
11	1st Drafts of Final Reports are due for preliminary comments	
12	Progress report and adjustments as needed	
13	2nd Drafts of Final Reports are due for comments	All original files must be turned in
14	Final Reports are Due	
15	Final Team Presentation	Place will be announced

Notes:

1 - Every team members must be present during meetings with the instructor and during presentations.
2 – Original electronic files in Word, Power Point, Visio, Downloaded Pictures (including source links), etc. must be turned in (in a single directory designated by team number) by the 2nd Draft due date.
3 - Actual schedule may deviate from the above table

Part 4: Grading and Specific Policies-EEE 192

Grading:
Attendance and punctuality is required.

Teamwork between members	10%
Problem Statement, distribution of tasks, schedule, progress review, 1st & 2nd Draft reports, preliminary team presentation	45%
Final Technical Report	25%
Final Team Presentation	20%

Attendance: All team members will meet at scheduled appointments to review project status and must submit weekly status reports.
Prior permission in writing is required for an excused absence.
Note on Failure to Progress: In the instructor's opinion and sole discretion, failure to show consistent and reasonable progress by each member of the team will result in failure of the course, delay of graduation, and repeat of the course at the next scheduled offering. It is vital that project teams show steady work and project progression at all times. You are encouraged to allow adequate time in your schedule for this course. An estimated average for the time requirement is 8-10 hours per week. Efficient use of time and proper sharing of the responsibilities among the team members are the main ingredients to success.

Your Reports are Grade is based on:

1 – Proper Structure as specified in Part 2 above (Course Requirements)
2 – Proper Format as specified in Part 2 above (Course Requirements)
3 – Clarity of the contents,

Your Presentation Grade is based on:

1. Ease of comprehension of your presentation. Use top-down approach.
2. Smooth transition from team members, i.e. good flow in presentation.
3. Presentation materials: slides, easy-to-read block diagrams, functional hardware/software, and no hiccups.
4. Professionalism.

5. Ability to answer questions satisfactorily.
6. Meeting your allotted time.
7. Ability to attract the audience. Make it interesting.

Team must verbally practice the presentation at least 2 to 3 times or until the whole team is able to perform the presentation within the allotted time and achieve the criteria above. Questions will be held until end of presentation.

Letter Grade Assignment

Letter grades are assigned based on the class distribution curve. The final grades can usually (but not necessarily!) be approximated by the following table. The actual final grade may be different based on various factors and unforeseen circumstances.

Adjusted Overall Performance in Percentile	Possible Final Grade
85% - 100%	**A^-, A**
70% - 85%	**B^-, B, B^+**
55% - 70%	**C^-, C, C^+**
40% - 55%	**D^-, D, D^+**
Below 40%	**F**

Important note: For more information about grading at Sac State, visit the academic policies and grading section of the university catalog.

Part 5: General University Policies

Attend Class

Students are expected to attend all class sessions as listed on the course calendar.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that they can help you find a solution.

Complete Assignments

Assignments must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

All discussion assignments must be completed by the assignment due date and time. Late or missing discussion assignments will effect the student's grade.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider dis-enrolling from a course. Refer to the Sac State Course Schedule for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons includes: (1) documented and significant change in work hours, leaving student unable to attend class, or (2) documented and severe physical/mental illness/injury to the student or student's family.

Incomplete Policy

Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if **agreed by both the instructor and the department Chair**. All incomplete course assignments must be completed within the terms of agreement.

Inform Your Instructor of Any Accommodations Needed

If you have a documented disability and verification from the Office of Services to Students with Disabilities (SSWD), and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to SSWD and meet with a SSWD counselor to request special accommodation *before* classes start.

SSWD is located in Lassen Hall 1008 and can be contacted by phone at (916) 278-6955 (Voice) (916) 278-7239 (TDD only) or via email at sswd@csus.edu.

Commit to Integrity

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your

behavior in and out of the classroom.

Sac State's Academic Honesty Policy & Procedures

"The principles of truth and honesty are recognized as fundamental to a community of scholars and teachers. California State University, Sacramento expects that both faculty and students will honor these principles, and in so doing, will protect the integrity of academic work and student grades." Read more about Sac State's Academic Honesty Policy & Procedures

Definitions

At Sac State, "**cheating** is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means."

"Plagiarism is a form of cheating. At Sac State, "plagiarism is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person's contribution." **Source:** Sacramento State University Library

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the office of student affairs.

Course policies are subject to change. It is the student's responsibility to check SacCT for corrections or updates to the syllabus. Any changes will be posted in SacCT.