ELEN 4304 Trends in Modern Power Systems

Catalog Description: discussion on specialty motors, renewable energy including Wind and Solar energy systems, energy Storage systems including an overview of storage devices, batteries, and fuel cells, and an overview of Smart Grids.

Prerequisites: ELEN 3441 Fundamentals of Powerengineering or equivalent

Meetings: MTWRF 11:30 - 1:00, Room 2631C

Instructors:
  Primary: Gleb V. Tcheslavski gleb@lamar.edu
  Secondary: staff


Recommended books:


On-line access: The course syllabus, assignments, solutions, and supplementary materials will be available through http://ee.lamar.edu/gleb/tmp/index.htm.

Structure: Five 90-minute lectures per week. Homework/project assignments, one midterm exam, and the final examination.

Course Objectives (with corresponding Student Learning ABET Criteria/outcomes): Having successfully completed this course, the student will be able to:

- Understand bases of power generation and distribution (Criterion 3(a),(e),(h),(j),(k));
- Understand the needs for alternative energy sources (Criterion 3(a),(b),(e),(h),(j),(k));
- Understand types and challenges in wind generators applications (Criterion 3(a),(b),(e),(h),(j),(k));
- Understand the principles and functioning of Solar energy systems (Criterion 3(a),(b),(e),(h),(j),(k));
- Understand the principles of energy storage (Criterion 3(a),(b),(h),(j),(k));
- Become familiar with different technologies used in rechargeable batteries (Criterion 3(a),(b),(c),(e),(h),(j),(k));
- Understand the concept and needs for the smart grid (Criterion 3(a),(b),(e),(h),(j),(k));

Homework assignments and the project related to these learning objectives will form an integral part of this course. IT IS YOUR RESPONSIBILITY TO ACHIEVE THE COURSE OBJECTIVES. IT IS MY TASK TO FACILITATE YOUR ACHIEVEMENT.

Tests: The MIDTERM and the FINAL exams will be closed book/notes.
Grading Policy: Grades will be determined on the basis of the overall performance on one midterm exam, the final exam, and homeworks, with the following tentative weights:

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<tr>
<th></th>
<th>Homework</th>
<th>Exam1</th>
<th>Final Exam</th>
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<tbody>
<tr>
<td>Weight</td>
<td>35%</td>
<td>30%</td>
<td>35%</td>
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The instructor reserves the right to modify the weights above if deemed needed.

Homework/Projects: Homework may be assigned. The definite due dates will be stated in the assignments. No late reports will be accepted.

Attendance policy: Class attendance is mandatory with exceptions for medical and family emergencies.

Special needs: Students with special needs or circumstances (religious, conflicts, disabilities, etc.) are encouraged to meet with me during my office hours.

Students with Disability statement

Any students with disabilities are advised to contact the professor privately to discuss your special needs. Students with disabilities should also contact the Services for Students with Disabilities by email SFSWD@lamar.edu, phone 409-880-8347, or visit the office in the Communication Building Room 105 to coordinate reasonable accommodations for students with documented disabilities.

Academic Dishonesty:

Academic misconduct and dishonesty include copying, cheating, plagiarism, dual submission and items purchased with the intent of deception (i.e. term papers purchased on the internet). Students are expected to do original work, including class assignments, exams and labs. Penalties include failure of the assignment (a grade of zero) and possible stricter penalties, where appropriate. Such action could result in the failure of the course or suspension from the university. Refer to LU Student Handbook for clarification on Academic dishonesty.

Miscellaneous: Your final grade will be determined based on your performance on Homework assignments and exams and based on the overall class performance. Extra credit assignments may be considered. Your instructor will be available for individual help during his Office Hours. Walk-ins are welcome! Homework assignments and other class-related material will be available through http://www.ee.lamar.edu/gleb/mps/Index.htm Your comments, suggestions, and concerns regarding the class material and organization are highly encouraged.