Revised Scope for Course Projects

- Choose a topic – 1 or maximum of 2 people per group.
- Review at least 2 papers per person on the selected topic. You need to clearly identify which 2 papers you will be using soon before the presentation.
- Understand the methodology, results and discussion.
- Apply the concepts to any simple, real life example and demonstrate the results under conditions different than what's presented in the paper.
- Make a presentation after the Endsems.
- Your presentation should have newer information that is not discussed in the class.

Presentation Format

- Introduction – General area and description of the topic.

- Motivation – why should anybody care about this problem? You should be able to catch the attention of audience.

- Methodology – Make it understandable to audience who have not studied the topic as well as you have.

- Results from paper – Discuss key results from the paper

- Application – Apply the models / techniques described in paper to some real life example, and demonstrate your calculation / results.

- Conclusion / Takeaway – What is single, short takeaway message you want the audience to have based on your presentation?

Possible Topics for Course Project

- Markov Models for estimating the reliability of complex systems

- Techniques to analyze accelerated test data in the presence of multiple Arrhenius activation energies.

- Physical significance of Weibull distribution (weakest link theory using extreme value distribution)

- Maximum Likelihood vs Least Squares fitting of regression lines. When to use which one?

Possible Topics for Course Project

- Failure modes and mechanisms in <u>Electrolytic Capacitors</u> and models to predict their reliability under relevant stressors.

- Failure modes and mechanisms in <u>insulated-gate bipolar transistors (IGBTs)</u> and models to predict their reliability under relevant stressors.

- Failure modes and mechanisms in <u>GaN based power devices</u> and models to predict their reliability under relevant stressors.

- Failure modes and mechanisms in <u>SiC based power devices</u> and models to predict their reliability under relevant stressors.