# EET109 Power & Energy Management-I

Autumn 2025-26

Instructor: Parikshit Pareek

Department of Electrical Engineering,
IIT Roorkee

# Logistics

We will be covering: **Algorithms for Power Grid**

- Instructor: Parikshit Pareek (pareek@ee.iitr.ac.in)
- Course Website: https://psquare-lab.github.io/teaching/course_EET109/
- Class Hours (Unless Announced):

  Wednesday: 2PM-4PM : Discussions– Will start when needed.
  Friday: 11AM-1PM : Main Lectures
- Mode of Teaching: Mostly Board with Occasional Slides like Today.
- Instructor Notes will **Not** be shared.
- Discussion: Offline, Can create an online forum if needed.

# Email & Communication Policy

- **All official announcements** will be:
  - Sent via email
  - Updated on the course website
- **Class hours** are the appropriate place for:
  - All discussions
- Individual emails to instructor are highly discouraged and should only be used for **urgent or private matters** class hours.

# Prerequisites

- Linear Algebra 101 – Will Review
- Probability 101 – Will Review
- Common Sense!
- Power System I (I know you guys **did it** last Sem!)
- Working knowledge of Python + Pytorch + Sklearn + Cuda $\cdots\cdots$

# Evaluation Policy

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|---|---|---|
| Total Marks | 50 | 50 |
| Components | Individual Coding Tasks<br>Assignments & Peer Discussion | Term Paper |

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- Coding Task 1 – 7 Marks
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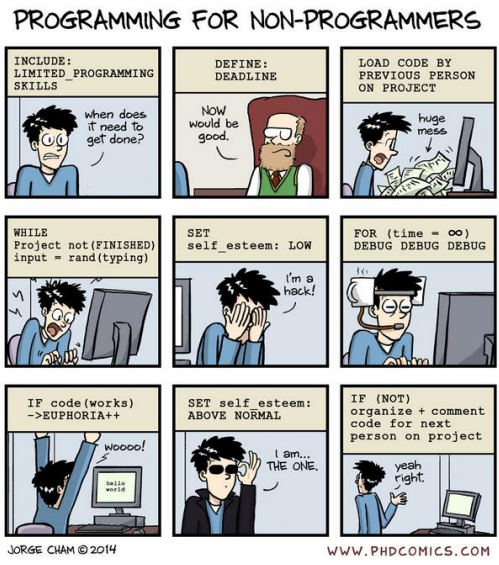
– Home Works: No Submission Needed, but Part of Syllabus & Questions Might Appear in Exams.

– Course will be demanding in terms of workload, I will try to be easy on Grading.

# Term Paper Team

- **Team Size:** Five to Six members
- **Interdisciplinary Balance:** Balance of coders, power system guys and ML guys is encouraged.
- **Self-Selection or Instructor Assignment:** Voluntarily formation is preferred.
- **All Team Members MUST WORK:**
- **Team Registration Deadline:** By Next Week this time.
- **Peer Evaluation:** Peer evaluations will be collected at the end of the term. Unequal participation will result in heavy individual grade adjustments.
- **Academic Integrity:** Plagiarism will result in **Zero** marks.
- **Communication:** Teams are expected to meet regularly and track progress. Use GitHub for code and Overleaf for writing.
- **Tell Me Before Its Too Late:** Any conflicts or collaboration issues should be reported promptly to the instructor.

# Coding: Assistance with coding issues is outside the scope of course support.




Your code will be assessed based on both *accuracy* and *execution speed*.

Strong coding skills are crucial for your Term Paper success!

Proficiency in writing CUDA kernels is a valuable advantage.

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- **Coding assignments** will be subjected to a code plagiarism check. Each student must be able to explain their entire code. **Marks will be awarded based on the quality of the explanation**, not just the code itself.
- Course website will have reading material. Most of it is must for completion of project.

# Lecture Notes Scribe– 10 Marks

- For each lecture, a team of **2–3 students** will scribe using LaTeX on a given Overleaf Account.
- There are three main tasks:
  - ✓ **Primary Note-Taking**: Taking detailed notes during the lecture.
  - ✓ **LaTeX Writer**: Converting notes into clean, structured LaTeX, follows the format diligently.
  - ✓ **Reviewing/Editing**: Refining content for clarity, formatting, and accuracy.
- Grading Criterion:

| Criterion | Marks | Criterion | Marks |
|---|---|---|---|
| Completeness and Coverage | 2 | Use of Diagrams | 2 |
| Clarity and Accuracy | 3 | Use of Examples | 1 |
| Formatting and Structure | 2 | Timely Submission | 1 |

- To achieve higher marks, submissions must exceed baseline expectations and demonstrate clarity, depth, and precision—comparable to the quality of a research article.
- Deadline: Next Lecture.
- LLMs can be used for LaTeX help, **Not** for text paraphrasing.

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  - ✓ Fast Decoupled Load Flow Formulation – Assignment Task 1.1
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- ➢ Data-Driven Power Flow Modeling
- ➢ Gaussian Process Premier –Coding Task 4