CSE 250L

Circuits and Electronics Lab

- ## Experiments

  - **Hardware**
    1. Introduction to Series, and Parallel circuits.
    2. Verification of KVL and KCL.
    3. Verification of the Superposition Principle.
    4. Study of the I-V characteristics of linear circuit elements.
    5. Verification of Thevenin's theorem & Maximum Power Transfer theorem.
    6. Study of the transient behavior of RC circuit.
    7. Familiarization with the alternating current (AC) waves.

  - **Software (LTSpice)**
    8. Verification of Thevenin's theorem & Maximum Power Transfer theorem.
    9. Study of the transient behavior of RC circuit.
    10. Familiarization with the alternating current (AC) waves.

N.B.: Experiments 2 and 3, and Experiments 9 and 10, will be conducted on the same lab day (on Lab day-02 and Lab day-08 respectively).

- ## Marks Distribution

Attendance and Class performance	5%
Report	3%
Lab test (Hardware)	7%
Project	5%
Total	**20%**

- ## Group Formation

  - There will be **6 or 8 groups (depending on the number of tables available)** in each lab section. The groups will be formed before starting the first lab experiment. The formed groups will be maintained throughout the semester.
  - The lab faculties hold the power to form/change/take any decision regarding the lab groups.

- **Attendance and Class Performance**

  - Attendance and Class performance marks will be calculated by adding up class performance marks for all the experiments (10 marks each).
  - A student's attendance will be counted as a "Late Attendance" if he/she comes 15 minutes after the scheduled lab time. Every "Late Attendance" will be considered as a "Half Attendance".
  - If a student remains absent during an experiment **due to a valid reason**, he/she must perform that experiment with any other section (subject to approval from the lab faculty of that section) . Otherwise, he/she will not be awarded **Attendance, and Lab Performance** marks for that particular experiment **under any circumstances**.

- **Report**

  - **One individual from each group** will have to submit a lab report on a particular experiment.
  - Each of the groups will have to submit **at least one report** for **each hardware experiment**.
  - By the time all the experiments are completed, each student should have **at least one lab report** submitted. If all the members of a group have one report submitted at some point, the lab faculty may specify who will submit the next report/reports based on marks obtained from the previous reports.
  - **The report must be prepared in the provided Lab sheet. Students must answer all the Questions and show necessary calculations. The Discussion and the Data Table section should also be completed properly.** *Extra pages can be used if necessary.*
  - Students must submit **both hard copy and softcopy of the lab reports. The softcopy should be submitted within the night before the next lab day.** Faculty will provide a Google form link for the report softcopy submission.

    N.B: The hard copy of the lab sheet will be provided by the faculty in the lab session (One for each group). The softcopy will be provided in Discord.

- **Lab Test**

  - A hardware lab test will be held after performing all the hardware experiments **(Experiment 01 – Experiment 07).**
  - Students may be asked to implement a circuit comprising series-parallel combinations of circuit components and measure voltage, current, power, etc. using a multimeter or/and plot waveforms using the oscilloscope. The understanding and interpretation skills of the students will be tested through a viva during the lab test.
  - **The lab test will be individual.**

- **Project**
  - ❖ Details will be announced later.

* ***All the policies are subject to change depending on the decision of the faculties.***

* ***Any kind of plagiarism will result in severe punishment.***