EE 579A / EEP 592A

Electromagnetic Compatibility

Final Project

The final project should be done in groups (as discussed in class), and each group needs to find a related EMC topic/issue within their domain of interest or current work. This can be:

- Demonstrating a **PCB** issue such as crosstalk between adjacent lines and the clock, ground bounce, power droop, etc., and its potential solution(s)
- Demonstrating an issue within the **auto** industry such as noise reduction within electrical harnesses, noise coupling towards controller circuits, etc., and its potential solution(s)
- Demonstrating an issue within the **aerospace** industry such as noise reduction within avionics circuitry, EMC issues within the harnesses, etc, and its potential solution(s)
- Demonstrating an **EMC issue in general** along with its potential solution(s)

Submission Notes and grading criteria:

(1) The project problem should be well defined and explained.

(2) You should model the problem via LTSPICE, and show the EMC issues before and after (at least two LTSPICE models) utilizing a solution (i.e. before adding a ferrite bead, a common-mode choke, etc) so that the reader appreciates the issue and its potential solution

(3) This is for demonstrating purposes only, and thus you do not need to exactly replicate an actual scenario from industry (it is your choice)

(4) You need to properly analyse the results and compare against standards, i.e. FCC or CISPR, or MIL-STD (be creative, you can use MATLAB or other visual tools to plot results in a nice way).

(5) Grading criteria is as follows:

a.	Complexity and creativity	15%
b.	Detailed problem description	15%
c.	Organized and detailed report	15%
d.	Simulation results, circuit models, analysis and discussion	30%
e.	Presentation (15 min + 5min Q/A)	25%

(6) You need to send me ALL the LTSPICE files, MATLAB or other codes/analysis files, as separate files, along with the Project report (word + PDF) and presentation file (PPT).

(7) Send the files AS LINKS, and NOT AS ATTACHEMENTS. Make sure that the links are accessible, and I do not need to contact you again for permissions (marks will be deducted if I need to contact you to get permissions!).

(8) Use this naming convention:
EE579A_EEP592A_Final_Project_(file-name)_(group-number)_Spring2025.(file-type)
Example, the PDF project report, should be:
EE579A_EEP592A _Final_Project_Report_(group4)_Spring2025.pdf

(9) Submission date deadline is **2 June 2025, 8pm.**