ENCS3330 – Summer Sem 2022-2023 - Final Project Grading

Design of Efficient 4x4 Enhanced Pipeline multiplier Based with Various Optimization Techniques

Teams of 3 students undertake a large circuit design problem, going from specification to implementation while optimizing for speed, area, and/or power. Group collaboration and engineering design. See attached papers for Design of Power Efficient 4x4 Multiplier Based On Various Power Optimizing Techniques. As a reference. The last day for presentation is Sep 7th .

Turn it in Report with similarity less than 20% Is required on Turnitin .
Best report can be published will get 40/40 in the project instead of the regular mark. This includes detail instruction on how to preduce the design as appendix to the paper and video

GRADES: Grading is based upon the following factors

- Presentation summary as presenting this into a conference and Final project report
- Technical competency in pursuing project goals
- Proficiency in collaboration, as measured by overall project integration and success.

- Implementation- **Presentation Feb 9th lecture time**
  - Schematic Design ____ / 10
  - lTSpice Simulation one cell and for 4 bits ____ / 5
  - layout ____ / 15
  - Layout based Simulation ____ / 5
  - Overall Area ____ / 5
  - Delay ____ / 5
  - Power ____ / 5
- Final Report -IEEE format ____ / 50
  - **The report due Sep 7th lecture time should have:**
    - **Download template from:** **https://www.sciencedirect.com/journal/microelectronics-journal**
    - Content:
      - Abstract
      - Introduction ____ / 10
      - Existing system and comparison ____ / 10
      - Simulation and results: elaborate on the simulation and include table comparisons ____ / 10
      - Conclusion____ / 10
      - References: add all references not less than 10, 5 of them have to be within the last 2 years, and at least one of them from **https://www.sciencedirect.com/journal/microelectronics-journal**____ /10
      - **need to submit the report on itc after running it through turn-in. % of similarity less than 20%**

Note: figures and tables formats in the report :

- **Need to be nice and clean, readable, and not black and white.**
- **Need to be your own drawing not cut and past**
- **Exact copy of figure, table. Circuit, the content will be zero grade**

Total ____ / 100

Some references:

- https://www.youtube.com/watch?v=4-l_PGPog9o
- https://www.youtube.com/watch?v=MCFG7XD16Ek
- http://www.ijsret.org/pdf/EATHD-15026.pdf
- https://www.youtube.com/watch?v=rqwkrUcNyH4
- https://www.youtube.com/watch?v=4-l_PGPog9o
- https://www.youtube.com/watch?v=WxSR2Yhnqk4&t=30s
- https://www.acsu.buffalo.edu/~phaniram/bootstrap-prestructure22_files/images/paper_1.pdf