EE8217 DESIGN PROJECT FORMAT

1. **Abstract:**
   Brief description of project objectives and results.

2. **Project Specification:**
   2.1 Functional Spec.: description of the function algorithm and data structure.
   2.2 Technical Spec.: determination of performance parameters and constrains.

3. **Theory:**
   3.1 Presentation or algorithm in the form of sequencing graph.
   3.2 Scheduling and binding with resources according to ASAP timing diagram (to be provided re: Lecture 10 Notes).
   3.3 Determination of timing parameters: Latency and Cycle time $\leq$ Spec. limits
   3.4 Determination of types of resources (adders multipliers, LUTs, etc.) and minimum amount of each type of resources to satisfy Spec. requirements.
   3.6 Determination of Initiation and Termination Cases and list of associated signals (according to Lecture 10 Notes).

4. **Design:**
   4.1 Creation of the "Symbol" of the Component (with all init/termination inputs, data I/O buses and associated strobes, custom control/feedback signals, clock, enable, reset signals, etc.).
   4.2 Conversion of the scheduled and bind graph to the data-path block diagram (including determination of resource multiplexing scheme).

5. **Implementation:**
   5.1 HDL coding with comments (Source code and compilation results to be attached in Appendix "A").
   5.2 C-coding for MicroBlaze or other soft-core processor (Source code and compilation results to be attached in Appendix "B").

6. **Verification:**
   6.1 Timing simulation and Hardware timing emulation (using ChipScope Pro). with comments for: Init case / Start –up (Latency) / End cycle / Termination case (to be attached in Appendix "A").
   6.2 Timing results for soft-core implementation (to be provided in Appendix B).

7. **Comparative analysis:**
   7.1 Calculation of Speedup.
   7.2 Total cost estimation for production series 100, 1000 and 10,000 units.
   7.3 CPR = Amount of data processed / sec. per 1$ for soft-core and ASP (application specific processor) implementation for 100, 1000 and 10,000 units.

8. **Conclusion**

Total page limit = 15 pages: Times Roman 12, Single spaced, Figures, Tables included Appendices excluded (Appendices are additional pages)