Course Description: 3 credits. Recommended preparation: ECE 249 and ECE 252. This course aims to convey knowledge of advanced concepts of circuit design for digital VLSI components in state of the art MOS technologies. Emphasis is on the circuit design, optimization, RTL design, synthesis, and layout of either very high speed, high density, or low power circuits and systems for use in applications such as micro-processors, signal and multimedia processors, memory and periphery. Special attention will be devoted to the most important challenges facing digital circuit designers today and in the coming decade, being the impact of scaling, deep submicron effects, interconnect, signal integrity, power distribution and consumption and timing issues.

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Grading Policy (tentative):
- Final project: 35%
- Final exam: 25%
- Homework: 20%
- Paper reading and presentation: 20%