

UNIVERSITY OF SOUTHERN CALIFORNIA

COMPUTER ENGINEERING

SCREENING EXAMINATION

**EE 677**

## **VLSI Architectures and Algorithms**

### SUGGESTED READING

The course is focused on application acceleration on reconfigurable computing platforms. The emphasis is on study of algorithmic techniques to speed-up computations using this technology. While some background in FPGAs is desirable, the bulk of the course focuses on topics such as modeling from a computational perspective, parallelization strategies, performance analysis, application specific architectures for arithmetic operations, signal processing kernels, dense algebra, and area, energy and time tradeoffs. Following books illustrate the topics of broad interest; the course also covers recent literature in these topic areas.

[1] Reconfigurable Computing: Accelerating Computation with Field-Programmable Gate Arrays, Maya B. Gokhale and Paul S. Graham, Springer, 2005. (Chapters 1-6)

[2] Computational Aspects of VLSI, Jeffrey D. Ullman, Computer Science Press, 1984. (Chapters 1-6)

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Please be aware that these references are for guidance in BASIC knowledge. Ph.D. candidates are screened on the basis of their talent, course knowledge, independent reading and experience.

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