

Course Assessment Summary
COE 360 Principles of VLSI Design (3-0-3)
Term 062

Course Learning Outcomes

1. Ability to apply knowledge of mathematics, science, and engineering in the design, analysis and modeling of digital integrated circuits.
2. Ability to design and conduct experiments using SPICE to characterize and optimize digital integrated circuits.
3. Ability to Design, Verify, Analyze and Evaluate the performance (speed, Power, Area, Noise margins) of different MOS digital integrated circuits for different design specifications
4. Ability to use CAD tools in the design and verification of digital integrated circuits.
5. Ability to function as an effective team member.
6. Ability to communicate effectively.

Section#	Source of Outcome Data	Outcome1	Outcome2	Outcome3	Outcome4	Outcome5	Outcome6
2 & 3	Instructor Evaluation	56.2%	63%	55.8%	57.4%	Not assessed	60%
	Student Survey	77.6%	82.81%	79.17%	59.89%	84.89%	78.1%
Overall	Assessment Rating	Achieved	Achieved	Needs Improvement	Needs Improvement	Achieved	Achieved

Observations:

1. Weights for outcome 2, 3, 5 and 6 did not satisfy the minimum outcome weight.
2. No coverage in class is given for outcomes 5 & 6. No effective quantifiable means of evaluating these outcomes are used.
3. According to instructor, all outcomes are considered achieved with outcomes 2 & 3 on the marginal side.
4. Several active learning techniques have been used which improved students' understanding but at the price of reduced material coverage.

Recommendations:

1. Spice assignments were mostly designed to target outcome 2. Better assessment of this outcome is needed e.g. through spice quiz in some lab.
2. More spice assignments are recommended as to help to improve outcomes 3 & 4.