2013 Scanning Sheet. Assignment Description:_____ Instructor:_____ Date:_____ Scanned File Name:_____

ABET Outcomes											Rubric or student %	Example problem	Outcome #	**EE 480 Integrated Circuit Fabrication Laboratory (1) – Outcomes Reviewed 2013**
A	B	C	D	E	F	G	H	I	J	K				
	2	2	2	2	1	1		1		1			1	Perform wafer cleaning process, major fabrication steps such as oxidation, photolithography, diffusion, metallization, and characterization of major fabrication steps using analytical equipment.
	2	2	2	1	1	1		1		1			2	Operate the equipment performing major fabrication steps, i.e. Ellipsometer, Nanospec System, Four Point Probe, Mask Aligner, Diffusion and Oxidation Furnaces, Photoresist spinner, Wafer drying by Spin Dryer, Wet benches for wafer cleaning, Resistivity monitoring system used during wafer cleaning, e-Beam evaporator for metallization, PECVD reactor, Tencor Profilometer for metal step measurement, Junction depth measurement system by angle lapping machine, high resolution microscope and inspection microscopes, HP parameter analyzer, HP high frequency CV measurement system, Keithley Parameter extraction system, Keithley simultaneous CV (low and high frequency) measurement system, and wafer probe station.
	2	2	2	2	1	1		1		1			3	Design fabrication of n-MOSFET chip and its electrical and physical evaluation. Also simulation for the n-MOSFET fabrication schedule, and comparison of calculated, simulated, and measured parameters of fabricated n-MOSFET chip.
						2							4	Communicate the results in the form of a final project report.

1=supporting contribution
2=significant contribution

Rubric
5: Excellent Mastery of Outcome By Vast Majority of Students
4: Good Mastery of Outcome By Vast Majority of Students
3: Adequate Mastery of Outcome By Majority of Students
2: Marginal Mastery of Outcome By Most Students
1: Lack of Mastery of Concept By Most Students

Improvement Suggestions or Comments:

a. an ability to apply knowledge of mathematics, science, and engineering
b. an ability to design and conduct experiments, as well as to analyze and interpret data
c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
d. an ability to function on multi-disciplinary teams
e. an ability to identify, formulate, and solve engineering problems
f. an understanding of professional and ethical responsibility
g. an ability to communicate effectively
h. the broad education necessary to understand the impact of engineering solution in a global, economic, environmental, and societal context
i. a recognition of the need for, and an ability to engage in life-long learning
j. a knowledge of contemporary issues
k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice