Course Information	Course Title	Analog Integrated Circuit Design	Course ID	ICE3106
			(Course Type)	
	(Credit/ hours per week)	3/3	Version (date)	
Instructor	Prof. Gyeongsu Byun			

Course Learning Objective

	Course Objectives	Relation with Program Outcomes
1	Ability to solve information and communication engineering problems using mathematics, basic science, and engineering knowledge, and information technology.	PO 1
2	Ability to analyze information and communications engineering data and identify given facts or hypotheses through experiments	PO 2
3	Ability to define and formulate information and communication engineering problems	PO 3
4	Ability to use up-to-date information, research results, and appropriate tools to solve information and communication engineering problems	PO 4

Course Description

This course focuses on analog integrated circuit (IC) design in the CMOS technology for various applications such as semiconductor IC microsystems and mobile communications system. Topics covered include deep understanding of key amplifiers, current mirrors, frequency responses, operational amplifiers.

Course Outcomes

NO	Details
	Ability to analyze advanced characteristics of MOS Device, single/multi-stage amplifiers and active Current Mirrors
	Ability to analyze and design advance circuits by using frequency Response and feedback techniques.
	Ability to understand advanced analog/mixed-signal ICs by using stability and frequency compensation for OPamp and other advanced circuits such as bandgap reference.

(Prerequisites)	
(Recommended Courses after This Course)	
Course Software or Tool	

Textbook

Title	Authors	Publisher	Place	Year	ISBN

references								
Lecture type	Lecture							
(Notes)								
(Evaluation Criteria)	(Attendance)	10%	(Quiz)	0%	(Lab Assignment)	20%	(Etc.)	10%
	(Mid-term Exam)	30%	(Final Exam)	40%	(Total)		100 %	
(Methods of Evaluation)	Assessment will be made on the basis of written examination and assignment.							

Weekly Topical Outline of Course		
(1st Week)	Topic	MOS Amplifiers
	Contents	Key review of single-stage amplifiers
	Assignment	
(2nd Week)	Topic	MOS Amplifiers
	Contents	Differential amplifiers
	Assignment	
(3rd Week)	Topic	MOS Amplifiers
	Contents	Current mirrors and analog building blocks
	Assignment	
(4th Week)	Topic	MOS Amplifiers
	Contents	OPAMP circuits
	Assignment	
(5th Week)	Topic	MOS Amplifiers
	Contents	OPAMP circuits
	Assignment	
(6th Week)	Topic	MOS Amplifiers
	Contents	OPAMP circuits and building blocks
	Assignment	

(7th Week)	Topic	Midterm Exam
	Contents	
	Assignment	
(8th Week)	Topic	Frequency Response
	Contents	Frequency Response of analog amplifiers
	Assignment	
(9th Week)	Topic	Frequency Response
	Contents	Frequency Response of analog amplifiers
	Assignment	
(10th Week)	Topic	Compensation
	Contents	Compensation of analog amplifiers
	Assignment	
(11th Week)	Topic	Compensation
	Contents	Compensation of analog amplifiers
	Assignment	
(12th Week)	Topic	Amplifiers with filters
	Contents	advanced amplifiers with active and passive filters.
	Assignment	
(13th Week)	Topic	Amplifiers with filters
	Contents	advanced amplifiers with active and passive filters.
	Assignment	
(14th Week)	Topic	Amplifiers with filters
	Contents	advanced amplifiers with active and passive filters.
	Assignment	
(15th Week)	Topic	Final examination

	Contents	
	Assignment	
(16th Week)	Topic	
	Contents	
	Assignment	