	Study Topics	Sections in Razavi Textbook	Sections in Baker CMOS Book	Reference Papers/ Handouts
Review	Review of MOSFETs and Circuit Analysis	2.1-2.3, 16.1-16.2	1.1-1.3, 6.1-6.5	
	Analog Models (gm, ro, gmb, fT)	2.4	**9.1.1.-9.1.2**	
	Small Signal Analysis with Examples		**9.1.2**	
	Temperature dependent behavior, gain-speed tradeoff		**9.1.3**	
Mirrors & Biasing	Current mirrors, Current mirror mismatch	**5.1**	20.1	
	Supply independent biasing, Beta multiplier reference (BMR), Start-up circuit	**11.2**	**20.1**	
	Short-channel BMR		**20.1.4**	
	Cascode current mirrors, cascode output resistance	5.2	**20.2**	
	Regulated drain current mirror, Bias generation schemes		**20.3**	
Single-ended Amplifiers	Common source (CS) amplifier: low-frequency small and large signal behavior.	**3.1-3.2**	21.1,21.2.1	
	Source follower: low-frequency behavior, input range, applications	**3.3**	21.2.4	
	Common gate (CG) amplifier, current buffer, Comparison of gain stages.	**3.4**	21.2.3	
	Cascode amplifier, Lemma for estimating gain in amplifiers (A_v=-$G_m R_{out}$).	**3.5**	21.2.2	
	Folded cascode amplifier	**3.5**		
Frequency Response	Miller effect, poles and zeros in a system	**6.1**	**21.2.1**	
	CS frequency response, RHP zero.	**6.2**	21.2.1	
	RHP zero intuition, pole-splitting, Miller compensation.	**10.1-10.4**	21.2.1	
	Generic two-stage amplifier model	**10.5**	**21.2.1**	
	Source follower frequency response	**6.3**	21.2.4	
	Common-gate amplifier frequency response	**6.4**	21.2.3	
	Cascode amplifier frequency response.	**6.5**	21.2.2	
Diffamp	Differential signaling, basic diff-pair: input-output characteristics, Vin,CM independent biasing.	**4.1**	22.1	
	Diff-amps – large signal behavior, half circuit analysis.	**4.2-4.4**		
	Diff-amps – current mirror load, frequency response	**5.3, 6.6**	22.2-22.4	
Opamp Design and Analysis	Opamps: Gain and settling errors, non-linear settling (slewing), stability and frequency compensation.	**9.1**	24.1	
	Telescopic and Folded cascode opamps	**9.2**	24.3	
	Slewing in Opamps	**9.8, 10.5.1**		
	Two-stage Single-ended Opamps	**9.3**	**24.2**	
	Opamp Stability: loop-gain, closed-loop stability, phase margin	**9.3, 10.3-10.5**	24.1	O.1
	Opamps: Cascode, Indirect and feedforward Compensation	**10.6**	21.2.1, 24.2	O.7-O.8, O.6
	Gain-boosting Opamps	**9.4**	24.4	
FD Opamps	Fully-differential Opamps	**9.6**	26.2	
	Common Mode feedback (CMFB)	**9.6, Notes**	26.3	
	Switched Capacitor CMFB	**Notes**	26.4	
	CM/DM Loop stability and Simulation			**Handout**
Noise	Noise Models, PSD, input-referred noise	**7.1, 7.2**	8.1, 8.2	
	2-port noise model, analysis for CS, CG, SF	**7.3, 7.4**	8.2	
	Opamp noise analysis	**7.5, 9.10**		
	Simulation		8.2	**Handout**
BGR	Bandgap references	**11.1-11.7**	**23.1-23.2**	
	Voltage Regulators		24.5	

***Bold sections denote the primary reference used in the class notes.**