

EECE-316 Course Contents

Textbooks:

Franco, Design with Operational Amplifiers and Analog Integrated Circuits, 3rd edition, McGraw Hill
Neamen, Electronic Circuit Analysis and Design, 3rd edition, McGraw Hill

1. Op Amp Circuits

- A. Inverting/Noninverting Amp
- B. Other Circuits
- C. Differential Amp
- D. V-I Converters
- E. Schmitt Triggers
- F. Clipper and Clamper Circuits

2. Diode-Op Amp Circuits

- A. Precision Rectifiers
- B. Logarithmic Amplifiers
- C. Peak Detectors
- D. Sample and Hold Circuits

3. Op Amp Characteristics

- A. Non-idealities
- B. Compensation
- C. Norton Amp

4. Sinusoidal Oscillators

- A. Phase Shift
- B. Wien Bridge
- C. LC Oscillators
- D. Quadrature

5. Non-Sinusoidal Oscillators

- A. Multivibrators
- B. 555 Timer

6. Active Filters

- A. Transfer Functions
- B. VCVS and IGMF Realizations

- C. State Variable Realizations
- D. Switched Capacitor Filters

7. Linear Integrated Circuits

- A. V-F Converters
- B. Phase-Locked Loops

8. Voltage Regulators

- A. Rectifiers and Filters
- B. Linear Voltage Regulators
- C. Switching Voltage Regulators

9. High Frequency Amplifiers

- A. BJT Small Signal Equivalent
- B. 3-dB Cutoff Frequency
- C. Miller Effect
- D. FET Model
- E. Tuned Amplifiers

10. Power Amplifiers

- A. Class A Amplifiers
- B. Class B Amplifiers
- C. Class C Amplifiers
- D. Power Dissipation and Thermal Considerations

11. Thyristors

- A. Silicon Controlled Rectifier (SCR)
- B. Unijunction Transistor (UJT)