

## ECE 255 Reading Assignments: Spring 2019

Revised 12/20/18

| Week | Date             | Topic   | Chapter (7 <sup>th</sup> )                      |
|------|------------------|---|---|
| 1    | 01/07 –<br>01/11 | Course Introduction<br>Signals and Amplifiers;<br>Introduction to semiconductors                | Ch. 1.1-1.6<br>Ch. 3.1-3.2                      |
| 2    | 01/14 –<br>01/18 | Current flow in semiconductors<br>Energy band diagrams<br>The PN junction diode                 | Ch. 3.3<br>Ch. 3.4-3.6                          |
| 3    | 01/21 –<br>01/25 | Ideal diode<br>Modeling the diode<br>Diode circuits / special diodes                            | Ch. 4.1-4.2<br>Ch. 4.3-4.4<br>Ch. 4.5-4.6 / 4.7 |
| 4    | 01/28 –<br>02/01 | Bipolar Junction Transistors (BJTs)<br>BJT IV characteristics<br>DC BJT circuits                | Ch. 6.1<br>Ch. 6.2<br>Ch. 6.3                   |
| 5    | 02/04 –<br>02/08 | MOSFETs<br>MOSFET IV Characteristics<br><b>EXAM 1 (2/7/19)</b>                                  | Ch. 5.1<br>Ch. 5.2                              |
| 6    | 02/11 –<br>02/15 | DC MOSFET circuits<br>Biasing MOSFETs and BJTs  | Ch. 5.3<br>Ch. 7.4                              |
| 7    | 02/18 –<br>02/22 | Transistor amplifiers: Basic principles<br>MOS and BJT Small signal models                      | Ch. 7.1<br>Ch. 7.2.1 – 7.2.3                    |
| 8    | 02/25 –<br>03/01 | CS(CE) Amplifiers<br>CE with Emitter Resistor   | Ch. 7.3.1-4, 7.5.1-2<br>Ch. 7.5.3               |
| 9    | 03/04 –<br>03/08 | <b>EXAM 2 (3/5/19)</b><br>CG (CB) and CD (CC) Amplifiers  | 7.3.5-7; 7.5.4-5                                |
|      | 03/11 –<br>03/15 | <b>Spring Break</b>   |   |
| 10   | 03/18 –<br>03/22 | ICs: Current Mirror and Basic gain cell<br>ICs: CG (CB)   | Ch. 8.1 - 8.3<br>Ch. 8.4.1 / 8.4.4              |
| 11   | 03/25 –<br>03/29 | ICs: Cascode amplifiers<br>Multi-stage amplifiers   | Ch. 8.5<br>Ch. 8.7                              |
| 12   | 04/01–<br>04/05  | MOS differential pair (resistive loads)<br><b>EXAM 3 (4/2/19)</b>                               | Ch. 9.1   |
| 13   | 04/08 –<br>04/12 | Op amps<br>MOS differential amps (active loads)<br>CMOS Op amps                                 | Ch. 2.1-2.5<br>9.5<br>Ch. 9.6                   |
| 14   | 04/15 –<br>04/19 | Low frequency response<br>High frequency small signal model<br>High frequency response: CS (CG) | Ch. 10.1<br>Ch. 10.2<br>Ch. 10.3-10.4           |
| 15   | 04/22 –<br>04/26 | High frequency response: other single<br>and multi-stage amplifiers                             | Ch. 10.5- 10.8                                  |