

## ECE 604 - Fall 2016 Schedule

MWF, 1:30-2:20, Elliott

| DATE    | MTG.<br>NO. | TOPICS   | Reading Assign.<br>SECTIONS | HW SET<br>DUE |
|---------|-------------|--|-----------------------------|---------------|
| 8/22-M  | 1           | Electrostatics-Force, Coulomb's Law, Gauss' Law                      | 1.1-1.3                     | --            |
| 8/24-W  | 2           | Electrostatics-Examples of Gauss' Law                                | 1.4-1.6                     | --            |
| 8/26-F  | 3           | Electrostatics-Energy, Conservative Field, Electrostatic Potential   | 1.7-1.8                     | 1             |
| 8/29-M  | 4           | Electrostatics-Capacitance, Grad., Div., Laplace's & Poisson's Eqns. | 1.9-1.12                    | --            |
| 8/31-W  | 5           | Electrostatics-Cond. currents, Bound. Conditions, Direct Integration | 1.13-1.16                   | 2             |
| 9/2-F   | 6           | Electrostatics-Uniqueness, Images, Numerical Soln                    | 1.17-1.21                   | --            |
| 9/5-M   | --          | <b>NO CLASS – LABOR DAY</b>  | --                          | --            |
| 9/7-W   | 7           | Electrostatics-Energy, Energy density                                | 1.22                        | --            |
| 9/9-F   | 8           | Magnetostatics-Biot-Savart Law                                       | 2.1-2.2                     | 3             |
| 9/12-M  | 9           | Magnetostatics-Ampere's Law, Vector Potential                        | 2.3-2.9                     | --            |
| 9/14-W  | 10          | Magnetostatics-Inductance, Mag. Dipoles, Boundary Conditions         | 2.10-2.12, 2.14             | --            |
| 9/16-F  | 11          | Magnetostatics-Scalar Potential, Magnetization                       | 2.13, 2.15                  | 4             |
| 9/19-M  | 12          | Magnetostatics-Magnetic Energy, Inductance                           | 2.16-2.17                   | --            |
| 9/21-W  | 13          | Maxwell's Equations-Faraday's Law, Displacement Current              | 3.1-3.5                     | 5             |
| 9/23-F  | 14          | <b>Exam #1</b> (Covers Material from Class Meetings 1-12)            | --                          | --            |
| 9/26-M  | 15          | Maxwell's Equations-Differential Form, Time-harmonic form            | 3.6-3.11                    | --            |
| 9/28-W  | 16          | Maxwell's Equations-Poynting Thm., Boundary Cond.                    | 3.12-3.15                   | 6             |
| 9/30-F  | 17          | Maxwell's Equations-Wave Prop. in Cond., Impedance, Loss             | 3.16-3.18                   | --            |
| 10/3-M  | 18          | Maxwell's Equations-Wave Prop. in Abs. Dielectric, Potentials        | 3.19-3.21                   | --            |
| 10/5-W  | 19          | Transmission Lines-Wave Propagation, Pulse Propagation               | 5.1-5.6                     | 7             |
| 10/7-F  | 20          | Transmission Lines-Reflection, Input Impedance                       | 5.7-5.8                     | --            |
| 10/10-M | --          | <b>NO CLASS – FALL BREAK</b>   | --                          | --            |
| 10/12-W | 21          | Transmission Lines-Standing Waves, Pulses                            | --                          | 8             |
| 10/14-F | 22          | Transmission Lines-Smith Charts, Impedance Matching                  | 5.9-5.10                    | --            |
| 10/17-M | 23          | Transmission Lines-Loss Mechanisms                                   | 5.11-5.12                   | 9             |
| 10/19-W | 24          | Transmission Lines-Wave Prop. with Losses, Group Velocity            | 5.13-5.15                   | --            |
| 10/21-F | 25          | Plane Waves-General, Lossless, Polarization, Losses                  | 6.1-6.3                     | 10            |
| 10/24-M | 26          | <b>Exam #2</b> (Covers Material from Class Meetings 13-24)           | --                          | --            |
| 10/26-W | 27          | Plane Waves-Reflection from Surface, Normal Incidence                | 6.4-6.7                     | --            |
| 10/28-F | 28          | Plane Waves-Reflection from Thin Films, Oblique Angle                | 6.8-6.9                     | 11            |
| 10/31-M | 29          | Plane Waves-Diffraction, Total Int. Refl., Brewster Angle            | 6.10-6.14                   | --            |
| 11/2-W  | 30          | Boundary Value Problems (Two and Three Dimensional)                  | 7.1-7.2, 7.9-7.12           | 12            |
| 11/4-F  | 31          | Boundary Value Problems (Two and Three Dimensional)                  | 7.13-7.17                   | --            |
| 11/7-M  | 32          | Boundary Value Problems (Two and Three Dimensional)                  | 7.18-7.20                   | --            |
| 11/9-W  | 33          | Waveguides-General Properties  | 8.1-8.4                     | 13            |
| 11/11-F | 34          | Waveguides-Rectangular, TE and TM modes                              | 8.5-8.8                     | --            |
| 11/14-M | 35          | Waveguides-Losses  | 8.9-8.11                    | 14            |
| 11/16-W | 36          | Waveguides-Rectangular, Losses                                       | 8.15                        | --            |
| 11/18-F | 37          | Resonators-Rectangular   | 10.1-10.3                   | 15            |
| 11/21-M | 38          | <b>Exam #3</b> (Covers Material from Class Meetings 25-36)           | --                          | --            |
| 11/23-W | --          | <b>NO CLASS – THANKSGIVING BREAK</b>                                 | --                          | --            |
| 11/25-F | --          | <b>NO CLASS – THANKSGIVING BREAK</b>                                 | --                          | --            |
| 11/28-M | 39          | Resonators-Q-factor, Cylindrical                                     | 10.4-10.5                   | --            |
| 11/30-W | 40          | Antennas-Short Linear, Magnetic Dipole                               | 12.1-12.4                   | 16            |
| 12/2-F  | 41          | Antennas-Long Linear   | 12.5-12.8, 12.11-12.14      | --            |
| 12/5-M  | 42          | Antennas-Arrays  | 12.18-12.20                 | --            |
| 12/7-W  | 43          | Gaussian beams   | 14.13-14.14                 | 17            |
| 12/9-F  | 44          | Gaussian beams   | 14.15-14.16                 | --            |
| TBD     |             | <b>FINAL EXAM</b> (To Be Determined)                                 |                             |               |