ECE 3317

**Applied Electromagnetic Waves**

Reading Assignments

The reading assignments are chosen from the two books listed below. These reading assignments offer a helpful perspective on the material that is in the class notes. You are encouraged to also browse through the other supplementary books that are mentioned on the syllabus, which are on reserve in the Library.

W. H. Hayt and J. A. Buck, *Engineering Electromagnetics*, 9th Edition, McGraw–Hill, 2019.

L. C. Shen and J. A. Kong, *Applied Electromagnetism*, 3rd Edition, PWS, 1995.

**Vectors and Complex Vectors**

Hayt: Pages 1−13

Shen and Kong: Pages 1−19

**Vector Calculus**

Hayt: Pages 61−70, 94−96, 197−203

Shen and Kong: Pages 24−27, 29

**Maxwell’s Equations and Continuity Equation**

Hayt: Pages 286−288, 113−116

Shen and Kong: Pages 23−24, 31−34

**Poynting Theorem**

Hayt: Pages 386–389

Shen and Kong: Pages 39–41

**Transmission Lines (Time domain)**

Hayt: Pages 303–311

Shen and Kong: Pages 189–190

**Bounce Diagram**

Hayt: Pages 347–356

Shen and Kong: Pages 190–196

**Transmission Lines (Frequency domain)**

Hayt: Pages 315–317, 320–321

Shen and Kong: Pages 162–163

**Transmission Lines (Input impedance)**

Hayt: Pages 329–336

Shen and Kong: Pages 165–168

**Transmission Lines (SWR and generalized reflection coefficient)**

Hayt: Pages 325–329

Shen and Kong: Pages 168–174

**Transmission Lines (Smith chart)**

Hayt: Pages 336–345

Shen and Kong: Pages 174–180

**Transmission Lines (Impedance matching)**

Hayt: Pages 345–347

Shen and Kong: Pages 181–187

**Plane Waves**

Hayt: Pages 369–377

Shen and Kong: Pages 48–55

**Complex Permittivity, Loss Tangent and Depth of Penetration**

Hayt: Pages 378–385

Shen and Kong: Pages 62–72

**Skin Depth and Surface Resistance**

Hayt: Pages 390–396

Shen and Kong: Page 66

**Polarization of Plane Waves**

Hayt: Pages 396–403

Shen and Kong: Pages 56–62

**Rectangular Waveguide**

Hayt: Pages 482–493

Shen and Kong: Pages 128–135

**Antennas**

Hayt: Pages 523–526

Shen and Kong: Pages 210–231