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