Chapter 11 – Readings and suggested questions

11.1 – brief introduction

11.2 – transmission line parameters – connection between physical structure of transmission lines and distributed parameters R, L G and C. Table 11.1 is a good reference.

11.3 – derivation of transmission line equations, solution for time-harmonic fields; propagation parameters (alpha, gamma, velocity, wavelength, impedance); special cases (lossless, distortionless)

11.4 – terminated trasnsmission lines – Zin, swr, power; special cases (shorted line, open line, matched line)

11.5 – Smith chart – how the chart relates to transmission lines and basic operations

11.6 – using the Smith chart to design matching networks (stub tuners, quarter-wavelength transformers); using the Smith chart to find an unknown impedance with a slotted line

11.7 – we do not cover transients in ENEL 476

11.8-11.10 – several applications are described, and I encourage you to read these sections

Suggested questions

Transmission line parameters and line characteristics

11.1 – finding R, L, G, C
11.9 – R, L, G and C from transmission line characteristics
11.17
11.21

Terminated transmission lines

11.28, 11.29

Smith chart

11.31, 11.33, 11.35, 11.39, 11.46

Applications

11.55, 11.57, 11.59