

EE 571 PMP: High Frequency Circuits and Antennas **Winter 2014**

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Course Syllabus

- Transmission line theory,
- Multiconductor transmission lines
- Parasitic extraction for transmission line parameters
- Signal integrity, power integrity, and electromagnetic interference overview
- Summary of 3D electromagnetic solver methods for SI, PI, EMI
- Integrated antennas (time permitting)

References

- Review of (2 conductor) transmission lines – Fawwaz Ulaby, *Fundamentals of Applied Electromagnetics*, Prentice Hall
- Multiconductor transmission lines – Clayton Paul, *Analysis of Multiconductor Transmission Lines*, Wiley

None of the references are compulsory. Lecture slides are intended to be self-contained and complete. Suggested papers will be made available on 571 web site.

Assessment

The overall grade will be based on:

- Weekly homework assignments – 60%
- Final project – 30%
- Class participation – 10%

Approximate course topic schedule

Weeks 1: Introduction

Weeks 2-4: Two conductor transmission line theory – frequency domain analysis, Smith chart exercises and time domain analysis

Weeks 5-6: Multiconductor transmission line theory

Weeks 6-7: Parasitic extraction for transmission line parameters

Week 8: Signal integrity, power integrity, and electromagnetic interference overview

Week 9: Summary of 3D electromagnetic solver methods for SI, PI, EMI

Week 10: Additional topics, project and programming discussions

TA and Office hours TBD