

ME 305 POWER ELECTRONICS

Syllabus

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Grading:

- Homework:20 %
- Midterm: 25%
- Project: 20%
- Final: 35 %

Take Home

Contents

1. Introduction
2. Principles of Steady State Converter Analysis
3. Steady-State Equivalent Circuit Modeling, Losses, and Efficiency
4. Switch Realization
5. The Discontinuous Conduction Mode
6. Converter Circuits
7. AC Equivalent Circuit Modeling
8. Converter Transfer Functions
9. Controller Design
10. Magnetics

Suggested reading material:

Book 1: (Ericson Book)

Ericson, Robert W., Maksimovic. Dragan. Fundamentals of Power Electronics Second Edition. 2004 Kluwer Academic Publishers New York, 2001. ISBN: 0-7923-7270-0

Book 2: (Kassakian Book)

Kassakian, John G., Martin F. Schlecht, and George C. Verghese. Principles of Power Electronics. Reading, MA: Addison-Wesley, 1991. ISBN: 9780201096897.