ECE 3510 Exam 1 Study Guide

First Exam will be on Thursday 2/2/06. This is a change from the tentative schedule published earlier. It will be a **closed book** exam, but will include a information shown below.

The exam will cover

1. Laplace transforms (simple forms only)

$$F(s) = \int_{0}^{\infty} f(t) \cdot e^{-s \cdot t} dt$$

Euler's equations (will not be needed)

Laplace Transform table from Lathi, p.372 Laplace Transform properties from Lathi, p.389

2. Inverse Laplace transforms (partial fractions)

- 3. Relationship of signals to pole locations
- 4. Boundedness and convergence of signals
- 5. H(s) of circuits
- 6. Block Diagrams & their transfer functions

Standard feedback loop transfer function



- 7. BIBO Stability
- 8. Impulse & step responses
- 9. Steady-state (DC gain) & transient step responses
- 10. Effects of pole locations on step response
- 11. Sinusoidal responses, effects of poles & zeros, etc.
- 12. Effect of initial conditions
- 13. Homeworks 2 6
- 14. Labs 1 & 2

Our schedule until the exam will be:

Wed, 1/25	Step responses, 3.3
Thur	Sinusoidal responses, 3.4, Q & A for HW 4, HW 4 due
Fri	Sinusoidal responses, effects of poles & zeros, etc., Initial conditions, 3.5
Mon, 1/30	State Space, 3.6 (Will not be covered on exam 1), Q & A for HW 5, HW 5 due
Wed	Review for exam 1, Q & A
Thur, 2/2	Exam 1 in EMCB 104, HW 6 due

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