

AMAT 311 Fall 2006

Instructor: Jędrzej Śniatycki, MS 420.

Office hour: Monday, 15:00 (by appointment)

Text: *Elementary Differential Equations* by William F. Trench, Brooks/Cole.

Quizzes: There will be 6 quizzes given in labs. Credit of 30% will be given for 5 best quizzes.

| Week | Approximate Lecture Schedule Topic | Chapter |
|-------------------|---|-----------|
| Sep. 11 - 15 | Introduction | 1 |
| Sep. 18 - 23 | First Order Equations | 2.1 - 2.3 |
| Sep. 25 - 29 | First Order Equations | 2.4 - 2.6 |
| Oct. 02 - 06 | Applications of First Order Equations | 4.1 - 4.3 |
| Oct. 11 - 13 | Applications of First Order Equations | 4.5 - 4.6 |
| Oct. 16 - 20 | Linear Second Order Equations | 5.1 - 5.2 |
| Oct. 23 -27 | Linear Second Order Equations | 5.3 - 5.5 |
| Oct. 30 - Nov 3 | Linear Second Order Equations | 5.6 - 5.7 |
| Nov. 6 - Nov. 10 | Applications of Linear Second Order Eqs. | 6 |
| Nov. 15 | Review | |
| Nov. 17 | Midterm (in class) | |
| Nov. 20 - 24 | Series solutions of Linear Second Order Eqs | 7.1 - 7.3 |
| Nov. 27 - Dec. 1. | Series solutions of Linear Second Order Eqs | 7.4 -7.7 |
| Dec. 04 - 06 | Laplace Transform | 8.1 - 8.3 |
| Dec. 08 | Review | |

Labs.

Topics in **boldface** refer to quizzes.

| Week | Quiz | Topic | Chapter |
|-------------------|----------|--|------------------|
| Sep. 18 - 23 | | Direction Fields for First Order Eqs. | 1.3 |
| Sep. 25 - 29 | 1 | Linear and Separable Eqs. | |
| Oct. 02 - 06 | 2 | Homogeneous and Exact Equations | 2.4 - 2.5 |
| Oct. 11 - 13 | | Cooling and Mixing | 4.2 |
| Oct. 16 - 20 | | Elementary Mechanics. | 4.3 |
| Oct. 23 -27 | 3 | Applications of First Order Eqs | 4.1 - 4.5 |
| Oct. 30 - Nov 3 | | Constant Coefficients Homogeneous Eqs. | 5.2 |
| Nov. 6 - Nov. 10 | 4 | Linear Second Order Eqs | 5.1 - 5.2 |
| Nov. 15 - 17 | | The RLC Circuit | 6.3 |
| Nov. 20 - 24 | 5 | Applications of Second Order Eqs. | 6 |
| Nov. 27 - Dec. 01 | | Series Solutions | 7.2 -7.3 |
| Dec. 04 - 08 | 6 | Series Solutions | 7.2 - 7.3 |