

NORTH CAROLINA STATE UNIVERSITY
DEPARTMENT OF MATHEMATICS

MA341: Applied Differential Equations I

Semester: Summer I 2019

Textbook: Fundamentals of Differential Equations and Boundary Value Problems, by Nagle, Saff, and Snider, 7 th. Edition, Addison Wesley

Course Outline:

| <u>Section</u> | <u>Topic</u> |
|-----------------------|---|
| 1.1-1.3 | Solutions and initial value problems. |
| 2.2-2.4 | Separable, exact equations, linear first order equations |
| 4.1-4.3 | Introduction to second order linear equations, homogeneous linear constant coefficient equations. |
| 4.4-4.6 | The method of undetermined coefficients, superposition principle, and variation of parameters. |
| 9.3-9.7 | Linear systems of differential equations with constant coefficients, non-homogeneous systems. |
| 7.1-7.6 | Laplace transform: definition and properties, application to initial value problems |

Course Evaluation:

There will be three tests each worth 30% of the final grade. Homework is worth 10% of the final grade. The student is expected to attend classes and problem sessions. Late homework is not accepted. If a student misses an exam due to illness or excused absence he/she will be given a make-up exam.