

**2005 Quarter 3**  
**MATH 189 Technical Mathematics 3 (Engineering)**

**Outline**

**Statistics and Probability Topics**

<b>Hours</b>	<b>Topic</b>
2	Counting Techniques
2	Introduction to Probability
1	Introduction to Statistics
2	Pictures of Data
1	Measures of Central Tendency
2	Measures of Variation
1	Interpretations of Standard Deviation
1	Expected Value
2	Binomial Distribution
2	Poisson Distribution
2	The Normal Probability Distribution
2	Confidence Intervals for the Mean
1	Confidence Intervals for the Variance
2	Continuous Probability Density Functions
2	Linear Regression
2	Non-linear Regression

**Differential Equations**

1	Solutions of Differential Equations
1	Separation of Variables
1	Integrable Combinations
2	The Linear Differential Equation of the First Order
2	Elementary Applications
1	Second-Order Homogeneous Equations
1	Auxiliary Equations with Repeated or Complex Roots
2	Solutions of Non-homogeneous Equations
2	Applications of Second-Order Equations (simple examples)
2	Systems of Linear First-Order Differential Equations and Eigenvalues
2	Euler's Equation
2	Euler Method
2	Runge-Kutta Method

Lecture: 48 hours

Test: 4 hours

Leeway: 3 hours