Math 189 Technical Technology 3 (Engineering) Course Description
Camosun College 3rd Quarter 2004

Statistics and Probability Topics: counting techniques, introduction to probability, introduction to statistics, pictures of data, measures of central tendency, measures of variation, interpretations of standard deviation, expected value, the binomial distribution, Poisson distribution, the normal probability distribution, sampling distributions for the mean and variance, Xi-Square distribution, the uniform distribution, linear regression, and non-linear regression.

Applied Differential Equations Topics: solutions of differential equations, separation of variables, integrable combinations, the linear differential equation of the first order, elementary applications, growth and decay problems, second-order homogeneous equations, auxiliary equations with repeated or complex roots, eigenvalues and Euler's equation, applications of second-order equations, Euler method, and Runge-Kutta method.

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Organization

In-class workload: 5 hours lecture
Out-of-class workload: 5 to 10 hours per week
Prerequisites: Math 187 or (Math 175, Math 101, and Math 110)

Texts

Stats: Trushel, Peter J. and Chi-Ming Leung, *Math 189 Statistics*, Camosun College bookstore 2003.

DES: Trushel, Peter J., *Differential Equations Supplemental Material*, Camosun College bookstore 2003.

Wash: Washington, Allyn J., Basic Technical Mathematics with Calculus (Metric Version), 7th Edition, Addison-Wesley Publishing Company.

Assessment

4 Term Tests: 50% of Final Mark
Final Exam: 50% of Final Mark
(If final exam mark is higher than the term mark, final exam is taken as 100% of Mark.)

Percentage to Letter Grade Conversion

Percentage	Letter Grade
95 to 100	A+
90 to 94	A
85 to 89	A-
80 to 84	B+
75 to 79	B
70 to 74	B-
65 to 69	C+
60 to 65	C
50 to 59	D
below 50	F

Math 189 Outline

Statistics and Probability Topics

Hours	Reference (week)	Topic
2	stats 1 (1)	Counting Techniques
2	stats 2 (1, and 2)	Introduction to Probability
		Good Friday 9 April 2004
		Easter Monday 12 April 2004
1	stats 3 (2)	Introduction to Statistics
2	stats 4 (2, and 3)	Pictures of Data
1	stats 5 (3)	Measures of Central Tendency
2	stats 6 (3)	Measures of Variation
1	in class (3)	**Test 1 22 April 2004**
1	stats 7 (4)	Interpretations of Standard Deviation
1	stats 8 (4)	Expected Value
2	stats 9 (4)	Binomial Distribution
2	stats 10 (4 and 5)	Poisson Distribution
2	stats 11 (5)	The Normal Probability Distribution
1	in class (5)	**Test 2 6 May 2004**
2	stats 12 (5 and 6)	Sampling Distributions, Point Estimates, Confidence Intervals for μ
2	stats 13 (6)	Sampling Distributions, and Confidence Intervals for Variance
2	stats 14 (6)	Continuous Probability Density Functions
		Victoria Day 17 May 2004
1	in class (7)	**Test 3 20 May 2004**
2	stats 15 (7)	Linear Regression
1	stats 16 (8)	Non-linear Regression

Differential Equations

Hours	Reference (week)	Topic
1	Wash 30-1 (8)	Solutions of Differential Equations
1	Wash 30-2 (8)	Separation of Variables
1	Wash 30-3 (8)	Integrable Combinations
2	Wash 30-4 (8 and 9) and DES 1	The Linear Differential Equation of the First Order
2	Wash 30-5 (9)	Elementary Applications
1	Wash 30-6 (9) and DES 2	Second-Order Homogeneous Equations
1	in class (9)	**Test 4 3 June 2004**
1	Wash 30-7 (10)	Auxiliary Equations with Repeated or Complex Roots
2	Wash 30-8 (10)	Solutions of Non-homogeneous Equations
2	Wash 30-9 (10) and DES 3	Applications of Second-Order Equations (simple examples)
2	DES 4 (11)	Systems of Linear First-Order Differential Equations and Eigenvalues
1	DES 5 (11)	Euler's Equation
1	DES 6 (11)	Euler Method
1	DES 7 (11)	Runge-Kutta Method