

Department of Mathematics and Statistics
Math 318 Introduction to Probability and Statistics (4 credits)
Summer 2009

Instructor: Nusrat Jahan,
Office: Roop 319, **Telephone:** 568-4074, **E-mail:** jahannx@jmu.edu
Class Time: MTWTh 9:00 – 11:45 am, Class Room: 129 Roop Hall
Office Hours: MT 8:00 – 9:00 am, Wed 12:00-1:00 pm, and by appointment.
Text Book: Probability and Statistical Inference by Hogg and Tanis – 8th Edition.
Prerequisite: Math 236

Course Description: This is an introductory course covering both probability and inferential statistics. Topics that will be covered include basic concepts of probability, counting techniques, discrete and continuous random variables, discrete and continuous distributions, transformation techniques, Normal distribution, estimation, test of hypothesis, dependent sample inference, correlation coefficient, and linear regression.

Chapter Outline :

- Chapter 1 Section 1.1 Basic concepts, section 1.2 Properties of Probability, section 1.3 Methods of Enumeration, section 1.4 Conditional Probability, section 1.5 Independent events.
- Chapter 2 Section 2.1 Random variables of the discrete type, section 2.2 Mathematical expectation, section 2.3 Mean, Variance, and Standard deviation, section 2.4 Bernoulli trials and Binomial distributions, hypergeometric distribution, section 2.6 Poisson distribution.
- Chapter 3 Section 3.1 Continuous type data, section 3.3 Random variables of the Continuous type, section 3.4 Uniform and Exponential distribution, Section 3.5 Gamma and Chi-square distributions, section 3.6 Normal distribution, t distribution.
- Chapter 4 Section 4.1 Distributions of two random variables, section 4.2 The Correlation Coefficient, section 4.3 Conditional distributions, section 4.4 Bivariate Normal distribution.
- Chapter 5 Sections 5.1 Functions of one random variables, section 5.2 Transformations, section 5.3 Several independent random variables, section 5.6 The Central Limit Theorem.
- Chapter 6 Section 6.1 Point estimation, section 6.2 & 6.3 Confidence intervals for Means, section 6.4 Confidence intervals for Variances, section 6.5 Confidence intervals for Proportions, section 6.6 Sample size.
- Chapter 7 Section 7.1 Tests about Proportions, section 7.2 Tests about one mean, section 7.3 Tests of the equality of two means, 7.4 Tests for variances.

Homework: Problems will be assigned from the text book as we progress. Exams will be based on the homework problems

Exams: Three in class exams and six quizzes will be given during the semester. No makeup exams or quizzes. Quiz and exam questions will be based on homework problems and class lectures.

Tentative exam dates are:

1st Exam: May 28th, 2nd Exam: June 8th, 3rd Exam: June 17th

Final Exam: Final exam is comprehensive. Date: June 25th.

Grading : The overall course grade is based on in class exams, quizzes, and the final Exam in the following proportion.

In class exams: 54%, Quizzes: 18%, Final exam: 28%

Grading Policy:

97 & above : A+	87 to 89 : B+	77 to 79 : C+	67 to 69 : D+
93 to 96 : A	83 to 86 : B	73 to 76 : C	63 to 66 : D
90 to 92 : A-	80 to 82 : B-	70 to 72 : C-	60 to 62 : D-
			Below 60 : F

Academic Integrity: All students are expected to read and be familiar with the James Madison University's Academic Integrity Code. All charges of cheating or other academic offenses will be taken with utmost seriousness.