

Statistical Methods (OMIS 353)

The basic objective of this test is to examine the student's understanding of inferential statistics and probability. Topics covered on the exam may include:

- Descriptive statistics
- Basic probability and probability laws, including Venn Diagrams, unions, intersections, independence, conditional probabilities, and law of large numbers
- Random variables including continuous and discrete distributions, expected values, variances, and the central limit theorem
- Important probability distributions (binomial, normal, Poisson, and normal approximation of the binomial)
- Concepts of sampling and sampling distributions; distribution of the sample mean and sample variance
- Estimation theory including the concept of unbiased and minimum variance estimators, confidence intervals for means for small and large populations; confidence intervals for proportions
- Testing of hypotheses for means, proportions, variances; type 1 and type 2 errors, significance level, rejection regions, one sided versus two sided tests
- Basic linear regression including estimation of the slope and intercept, scatter diagrams, test of significance of regression, computation and interpretation of r square
- Multiple regression

References:

Statistics for Business and Economics by McClave, Benson, and Sincich, Prentice Hall, ninth edition

Statistics for Business and Economics by Anderson, Sweeney, and Williams, Thomson, eighth edition

Format: Multiple choice