

### **COR1.1305 Statistics & Data Analysis Topic List**

- Data summary: Types of data, descrip stats (mean, median, standard deviation, covar, correlation), stem & leaf display, box plot
- Probability: Algebra of events, conditional probability, independence
- Random variables: Probability mass function, mean, variance, std dev, covariance, correlation
- Specific distributions: Binomial, normal
- Sampling from a population: Central Limit Theorem
- Confidence interval: Mean of a continuous population and the binomial proportion
- Hypothesis testing & inference: tests of significance, types of error, tests for means.
- Simple linear regression: One predictor model, inference, t & F tests, R-squared (coefficient of determination), standard error of estimate, prediction, residual analysis, regression diagnostics.
- Multiple regression: t & F tests, R-squared (coefficient of determination), standard error of estimate, interpretation of coefficients, prediction, residual analysis, regression diagnostics, model repair, multicollinearity, model building, transformations.