

# Course Outline

## 1. Course Code and Title: Math104, Statistics

**Credits:** 3 credits

**Prerequisites:** Successful completion of Introductory and/or Intermediate Algebra courses is recommended before taking Statistics.

**2. Course Description:** Mat104 familiarizes students with the basic concepts of business statistics and provides a comprehensive overview of its scope and limitations. Using virtual learning assignments located at <http://straighterline.blackboard.com> students perform statistical analyses of samples, compute the measures of location and dispersion, and interpret these measures for descriptive statistics. Upon enrollment in Math104, students will be given instructions and a passcode to access this course at StraighterLine and in Yorktown University's course delivery system.

Math104 reviews important aspects of statistics including linear regression, multiple regression, and correlation analysis, as well as model building, model diagnosis, and time series regression using various models. Other topics include constructing a hypothesis on one and two samples, performing one-way and two-way analyses of variance, and applying nonparametric methods of statistical analysis.

**3. Course Goals:** After a review of the basic concepts of probability, students apply discrete and continuous distributions of probability. Students in Math104 will review linear regression, multiple regression, and correlation analysis, as well as model building, model diagnosis, and time series regression using various models.

## 4. Course Learning Outcomes

Students completing Math104 will be able to:

1. Define statistics and identify its scope and limitations.
2. Describe and apply the basic concepts in statistics.
3. Apply the sampling methods and the Central Limit Theorem to perform statistical analyses of samples and to predict population behavior.
4. Compute and interpret measures of location and dispersion.
5. Represent the statistical data in different forms and interpret the different representations.
6. Perform linear regression and correlation analysis.
7. Perform multiple regression and correlation analysis.
8. Describe the basic concepts of probability.
9. Describe and apply the discrete and continuous distributions of probability.
10. Conduct hypothesis tests based on one or two samples.
11. Perform one-way and two-way analyses of variance (ANOVA).
12. Apply nonparametric methods of statistical analysis.
13. Perform time series regression using various models.
14. Perform model building and model diagnoses

## 5. Course Concepts

1. linear regression

2. multiple regression
3. correlation analysis
4. probability
5. discrete and continuous distributions of probability
6. analyses of variance
7. nonparametric methods

## **6. Required Text**

Bowerman, Bruce, O'Connell, Richard , Orris, J. Burdeane, Essentials of Business Statistics, 4th Ed., McGraw-Hill, 2012. ISBN: 978-0-07-3401829

## **7. Recommended Reading**

## **8. Web Resources** [Located in Resources]

