

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



COURSE OUTLINE

BSAD 304 – BUSINESS FORECASTING AND APPLICATIONS

Prepared By: Shuting Wang and Chengru Hu

**SCHOOL OF BUSINESS AND LIBERAL ARTS
BUSINESS DEPARTMENT**

February 2017

A. **TITLE:** Business Forecasting and Applications

B. **COURSE NUMBER:** BSAD 304

C. **CREDIT HOURS:** (3)

D. **WRITING INTENSIVE COURSE:** No

E. **COURSE LENGTH:** (15 weeks)

F. **SEMESTER(S) OFFERED:** Spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, AND ACTIVITY:** 3 lecture hours per week

H. **CATALOGUE DESCRIPTION:** The objective of this course is to introduce various statistical forecasting techniques and their applications in business. Topics such as statistical inference and hypothesis testing, basic regression analysis, and forecasting model building are reviewed. Accounting, finance and economics data are used to illustrate how these techniques are used to make real world decisions.

MATH
or 141

I. **PRE-REQUISITES/CO-COURSES:** BSAD 204 grade C or better

J. **GOAL:** By the end of this course, students are able to:

<u>Course Objective</u>	<u>Institutional SLO</u>
a. Demonstrate an understanding of simple OLS regression technique, and its application in business modeling and forecasting	3. Prof. Competence
b. Formulate hypotheses to test business theories	2. Crit. Thinking
c. Construct confidence and prediction intervals based on regression results	2. Crit. Thinking
d. Apply common forecasting techniques used in business decision-makings.	2. Crit. Thinking 3. Prof. Competence
e. Use computer software to analyze business data	3. Prof. Competence

K. **TEXTS:**

Statistics for Business and Financial Economics, 3/E by Cheng-few Lee, John Lee, and Alice Lee. ISBN-10: 978-1-4614-5897-5, 2013, Springer

L. **REFERENCES:**

Business Forecasting, 9th Edition by Hanke, John E. and Dean W. Wichern, ISBN 0132301202, 2009, Pearson Higher Education

Practical Business Forecasting, by Evans, Michael K., ISBN 0-631- 22065-8, 2002, Wiley

M. **EQUIPMENT:** Technology enhanced classroom, access to company financial statements, Yahoo Finance, MS Excel, and computer internet access, and access to computer lab.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA:

- Exams
- Quizzes
- Homework
- Project participation
- Computer assignments

P. DETAILED OUTLINE:

- I. Hypothesis Test of Significance as a Business Decision: Quality Control
 - a. Estimating with confidence
 - b. The reasoning of significance test
 - c. Hypothesis and test statistics
 - d. P-value and alpha and statistical significance
 - e. Using significance tests
 - f. Power and inference as a business decision
- II. Inference for Distribution: Healthy Companies versus Failed Companies
 - a. Inference for mean of a population: monthly household telephone expenditure
 - b. Comparing two means
 - c. Business applications
- III. Inference for Two-Way Tables: Background Music and Consumer Behavior
 - a. Analysis of two-way tables
 - b. Formulas and models for two-way tables
 - c. Business applications: meta-analysis
- IV. Simple Linear Regression and the Correlation Coefficient: Causal Relationship Forecasting
 - a. Population parameters and regression models
 - b. Standard assumptions for linear regression
 - c. Ordinary least square estimation of coefficients
 - d. Test of significance
 - e. Confidence and prediction intervals
 - f. Business application: job stress and locus of control
- V. Index Numbers and Stock Market Indexes
 - a. Price index, quantity index, and value index
 - b. Stock market indices
- VI. Statistical Decision Theory: Methods and Applications
 - a. Four key elements of a decision
 - b. Expected monetary value and utility analysis
 - c. Bayes' strategy
 - d. Mean and variance trade-off analysis
 - e. Business application