FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL[1]

DEPARTMENT	COLLEGE
MATHEMATICAL SCIENCES	SCIENCE

RECOMMENDED COURSE IDENTIFICATION (*TO OBTAIN A COURSE NUMBER, CONTACT NMALDONADO@FAU.EDU*)

PREFIX ____STA____ COURSE NUMBER ____6236____ LAB CODE (L or C) _____

COMPLETE COURSE TITLE:
REGRESSION ANALYSIS

EFFECTIVE DATE
(first term course will be offered)

____FALL 2016____

CREDITS[2]
3

TEXTBOOK INFORMATION

Applied Linear Statistical Models by Michael H. Kutner, Christopher J. Nachtsheim, John Neter, and William Li, fifth edition, McGraw-Hill, 2005.

GRADING (*SELECT ONLY ONE GRADING OPTION*): REGULAR __X____ SATISFACTORY/UNSATISFACTORY _____

COURSE DESCRIPTION, NO MORE THAN THREE LINES:
This course is designed to provide some basic theory, methods and applications of regression analysis. Topics covered include simple regression (least squares method), multiple regression, transformations, inference and correlation analysis, categorical variables, residual diagnostics, model building, and multi-collinearity.

PREREQUISITES*	COREQUISITES*	REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*
STA 4443 OR STA 4032 OR EQUIVALENT	NONE	SENIOR OR GRADUATE

* PREREQUISITES, COREQUISITES AND REGISTRATION CONTROLS WILL BE ENFORCED FOR ALL COURSE SECTIONS.

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE: PhD

MEMBER OF THE GRADUATE FACULTY OF FAU AND HAS A TERMINAL DEGREE IN THE SUBJECT AREA (OR A CLOSELY RELATED FIELD).

Faculty contact, email and complete phone number: Hongwei Long hlong@fau.edu	Please consult and list departments that might be affected by the new course and attach comments.[3]

Approved by:

Department Chair: _R. Ning____

College Curriculum Chair: _____

College Dean: _Chris Wloto___

UGPC Chair: _Wm R McDaniel_

Graduate College Dean: _Deborah Floyd_

UFS President: _____

Provost: _____

Date:
10-7-15
11-15-15
12-9-15
10-11-15

1. **Syllabus** must be attached; see guidelines for requirements: *www.fau.edu/provost/files/course syllabus.2011.pdf*

2. Review **Provost Memorandum:** **Definition of a Credit Hour** *www.fau.edu/provost/files/Definition Credit_Hour_Memo_2012.pdf*

3. **Consent** from affected departments (attach if necessary)

Syllabus

Course Name

Regression Analysis

Course Number

STA 6236

Section Number

N/A

Prerequisites

o   STA 4443 Probability and Statistics 2 (Minimum Grade C) or
o   STA 4032 Probability and Statistics for Engineers (Minimum Grade C)

Credit Hours

3

Instructor

Hongwei Long, Office SE 268
Phone: (561) 297-0810
Email: hlong@fau.edu

Course Description

This course is designed to provide some basic theory, methods and applications of regression analysis. Topics covered include simple regression (least squares method), multiple regression, transformations, inference and correlation analysis, categorical variables, residual diagnostics, model building, and multi-collinearity.

Course Objectives

The students are expected to gain a firm foundation in the theory and applications of regression analysis to competently practice this valuable craft.

Course Evaluation Method

There will be graded homework assignments accounting for 30% of your cumulative performance, a midterm exam accounting for 30% of your cumulative performance, and a final exam (or project) that accounts for 40% of your cumulative performance.

Policy on Make-up Tests, Late Work and Incompletes

Homework assignments must be handed in on the due date. Late assignments will not be accepted. There will be no make-up midterm. If a student has an acceptable excuse for missing the midterm, the weight of the midterm will be shifted to the final. Make-up final exam will be given only under exceptional circumstance, and written, verifiable excuses must be provided.

A grade of *I* (incomplete) will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's *University Catalog*. The student has to show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

Students with Disabilities

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton-SU 133 (561-297-3880), in Davie-MOD 1 (954-236-1222), in Jupiter- SR 117 (561-799-8585), or at the Treasure Coast- CO 128 (772-873-3305), and follow all OSD procedures.

Code of Academic Integrity

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high values on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see http://www.fau.edu/regulations/chapter4/4.001_Honor_Code.pdf.

Required Text

Applied Linear Statistical Models by Michael H. Kutner, Christopher J. Nachtsheim, John Neter, and William Li, fifth edition, McGraw-Hill, 2005.

Supplementary/Recommended Readings

o   *Introduction to Linear Regression Analysis* by D.C. Montgomery, E.A. Peck, and G.C. Vining, 4th edition, Wiley, New York, 2006
o   *Applied Linear Regression* by S. Weisberg, 3rd edition, Wiley, 2005
o   *Nonlinear Regression Analysis and Its Applications* by D.M. Bates and D.G. Watts, Wiley, New York, 1988
o   *Applied Regression Analysis, 3rd Ed. by Draper and Smith, Wiley, 1998.*

Course Topical Outline

Week	Topics	Homework Assignment
1	Linear regression with one predictor variable	1.2, 1.8, 1.12, 1.22, 1.30
2	Inference in linear regression	2.9, 2.10, 2.12
3	Correlation analysis	2.27, 2.28, 2.29
4	Diagnostics	3.2, 3.9, 3.18
5	Remedial measures	3.19, 3.20, 3.23
6	Simultaneous inference	4.5, 4.9, 4.14
7	Matrix approach to simple regression	5.1, 5.3, 5.5, 5.8, 5.24
8	Multiple linear regression I	6.1, 6.15, 6.17, 6.22
9	Multiple linear regression II	7.5, 7.22, 7.26
10	Regression models for qualitative predictors	8.4, 8.16, 8.18, 8.20