UGPC APPROVAL	<u>.</u>
UFS APPROVAL	
SCNS SUBMITTAL	<u> </u>
CONFIRMED	
BANNER POSTED	····-
CATALOG	

(attach if necessary)

UNIVERSITY Graduate Programs—NEW COURSE PROPOSAL					OSAL <sup>1</sup>	SCNS SUBMITTAL  CONFIRMED  BANNER POSTED  CATALOG		
DEPARTMENT: MATHEMATICAL SC	IENCES		COLLEGE: SCIENCE					
RECOMMENDED CO	OURSE IDENTIFICATION:							
PREFIX STA	Course	NUMBER	6207	LAB C	one (Lor C)	EFFECTIVE DATE		
	E NUMBER, CONTACT <u>RSF</u>	-			JUL (2 0. 0)	(first term course will be offered)		
	E TITLE: APPLIED ST		<u> </u>					
CREDITS:	TEXTBOOK INFORMA	ATION:						
3	Applied Linear St 2005.	tatistical Mo	dels, 5th Ed. B	ly Nete	er, Kutner, Nachts	sheim and Wasserman. McGraw Hill.		
GRADING (SELECT O	ONLY ONE GRADING OPTIO	N): REGULAF	₹ <u>X</u> 5	SATISFA	CTORY/UNSATISFAC	CTORY		
Course Descripti	ON, NO MORE THAN THE	EE LINES:						
data analyses.	al theory inference, a action to regression n	nodels and n	nodel selection	ls; basi proced	c concepts of exp dures. Statistical s	erimental design; analysis of variance and software Minitab and R will be used for		
PREREQUISITES *:		COREQUIS	ISITES*: REGISTRATION			CONTROLS (MAJOR, COLLEGE, LEVEL)*:		
STA 4443 or STA equivalent	. 6326 or	NONE						
	REQUISITES AND REGISTA	<u> </u>		RCED FO	OR ALL COURSE SECT	10NS.		
	TIONS NEEDED TO TEAC TICS OR PH.D. IN STATIS		E:	_				
	l and complete phone n	iumber:	Please consult ar	and list departments that might be affected by the new course and attach				
Lianfen Qian		(	comments.			-		
lqian@fau.edu 297-2436	;	1	N/A					
	<u> </u>							
Approved by:	D 20.			Date	e:	1. Syllabus must be attached; see		
Department Chair: 100 HMB 101				<u> </u>	1/9/13	guidelines for requirements:  www.fau.edu/provost/files/course		
College Curriculum Chair:			14	1/25/13	syllabus.2011.pdf			
College Dean:			14	125/10	. Review Provost Memorandum:			
UGPC Chair:	NEBRUK	Lille	20		9-11-13	Definition of a Credit Hour		
Graduate College Dean: 10 120				9-12-13	www.fau.edu/provost/files/Definition  Credit Hour Memo 2012.pdf			
UFS President:	//							
Duarragh				1		3. Consent from affected departments		

Email this form and syllabus to <u>UGPC@fau.edu</u> one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

# **Syllabus**

1. Course Name

Course Number

**Credit Hours** 

**Applied Statistical Methods** 

STA 6207

3

### 2. Course prerequisites

STA 4443 or STA 6326 or equivalent

#### 3. Instructor

Lianfen Qian, Office SE 244

Phone: (561) 297-2486, fax (561) 297-2436

E-mail address: lqian@fau.edu

#### 4. Course description

Overview of normal theory inference, and categorical data methods; basic concepts of experimental design; analysis of variance and covariance; introduction to regression models and model selection procedures. Statistical software Minitab and R will be used for data analyses.

## 5. Course objectives

By finishing the course, students will be able to choose suitable statistical methods to analyze both numerical and categorical data. Students will be able to estimate the effects of possible factors on a response, to build statistical regression models and conduct model selection procedures. Students will be able to use statistical software packages such as Minitab and R for statistical analysis.

#### 6. Lecture Schedule

- o Designs of Experiments (ca. 1 week)
  - o Homework: For given research quest ons, design experiments to collect plata
- o Introduce Software (ca. 1 week)
  - o Homework: Learn Minitab and R language, write R program for given functions
- o Regression Modeling (ca. 3 week)
  - o Homework: Model data sets using simple and multiple linear regression
- o Model Diagnostics (ca. 1 week)
  - o Homework: Conduct residual check for exercises from previous week
- o Model Selection (ca I week)
  - o Homework: Explorer models for given data sets and select the best model for each given data set
- o Fixed effect models (ca. 2 weeks)
  - o Homework: Analyze data from experiments using fixed effect models and begin final project
- o Random effect models (ca. 2 weeks)
  - o Homework: Analyze data from experiments using both fixed effect and random effect models and compare the results and continue final project

- o Mixed effect models (ca. 2 weeks)
  - o Homework: Analyze data using mixed effect models and compare with regression models and continue final project
- ANCOVA(ca. 2 weeks)
  - o Homework: Analyze data with covariates using ANCOVA and compare with regression models and complete final project

### 7. Required Text

Applied Linear Statistical Models, 5th Ed. By Neter, Kutner, Nachtsheim and Wasserman. McGraw Hill, 2005.

#### 8. Supplementary/recommended readings

- An Introduction to Statistical Methods and Data Analysis, 6th edition (2010), R. Lyman Ott and Michael Longnecker, Duxbury-Thomson-Brooks/Cole, Belmont, ISBN-13: 978-0-495-01758-5.
- Fundamentals of Biostatistics, 6<sup>th</sup> Edition (2010), BernardRosner, Duxbury, ISBN-13: 978-0538733496

# 9. Assessment Procedure and Grading

There will be graded homework assignments accounting for 40% of your cumulative performance, a midterm exam accounting for 30% of your cumulative performance, and a final project that accounts for 30% of your cumulative performance. Your overall grade in the course is derived from your cumulative performance according to the following table.

	Cumulative Performance	Grade		
	> 94%	A		٠.
	> 90% – 94%	A-		
	> 87% – 90%	B+		
	> 83% – 87%	В		
	> 80% – 83%	B-		
	<i>&gt;</i> 75% − 80%	C+		
	≥ 65% – <b>75</b> %	C		7
	> 60% – 65%	C-	: 	
	> 57% – 60%	<b>D</b> +	l •	
	> 53% – 57%	D	İ	
	≥ 50% – 53%	D-	İ	
	<50%	F	ı	
10. Incomplete	e Grades			

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 bet met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

### 11. Makeup Tests and Extra Credit

If you cannot attend an exam or hand in a homework project in time due to a relevant reason like significant health problems or being involved in a major traffic accident, and you document this, then you can make up the respective assignment.

Extra credit work is not possible.

#### 12. Method of Instruction

The course is conducted in lectures combined with lab sessions. Assignments may require the use of a statistical software package such as Minitab or R language. Unless otherwise specified, for those assignments you can use statistical package of your choice.

#### 13. Disability policy statement

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 I (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.

# 14. Honor Code policy statement

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 value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at http://www.fau.edu/ctl/4.001 Code of Academic Integrity.pdf

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