| FAU FLORIDA ATLANTIC UNIVERSITY | **NEW COURSE PROPOSAL** **Graduate Programs** | UGPC Approval ____ UFS Approval ____ SCNS Submittal ____ Confirmed ____ Banner Posted ____ Catalog ____ |
|---|---|---|
| | **Department** Mathematical Sciencs<br>**College** Science<br>*(To obtain a course number, contact **erudolph@fau.edu**)* | |

| | | | |
|---|---|---|---|
| **Prefix** STA<br>**Number** 6230 | *(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)*<br>**Lab Code** | **Type of Course**<br>Lecture | **Course Title**<br>Statistical Models and Designs |
| **Credits** *(Review Provost Memorandum)*<br>3<br>**Effective Date** *(TERM & YEAR)*<br>Fall 2018 | **Grading** *(Select One Option)*<br>**Regular** ◉<br>**Sat/UnSat** ○ | **Course Description** *(Syllabus must be attached; see Guidelines)*<br>This course introduces basic concepts and methods in linear statistical models for regression, analysis of variance, and experimental design. This course is not intended for students in the Ph.D. program in mathematics. | |

| **Prerequisites** | **Corequisites** | **Registration Controls** *(Major, College, Level)* |
|---|---|---|
| STA 4442 with minimum grade C or equivalent | | |

***Prerequisites, Corequisites and Registration Controls are enforced for all sections of course***

| | |
|---|---|
| **Minimum qualifications needed to teach course:**<br>Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.) | **List textbook information in syllabus or here**<br>Applied Linear Statistical Models, 5th Edition, by Kutner, Nachtsheim, Neter, and Li. McGraw Hill, 2004. |
| **Faculty Contact/Email/Phone**<br>Hongwei Long/hlong@fau.edu/(561) 297-0810 | **List/Attach comments from departments affected by new course** |

| ***Approved by*** | | ***Date*** |
|---|---|---|
| Department Chair | S.C. Locke | 3/9/18 |
| College Curriculum Chair | [signature] | 3/21/18 |
| College Dean | [signature] | 3/21/18 |
| UGPC Chair | [signature] | 3-28-18 |
| UGC Chair | Paul R. [signature] | 3/28/18 |
| Graduate College Dean | [signature] | 3/28/18 |
| UFS President | | |
| Provost | | |

Email this form and syllabus to UGPC@fau.edu one week before the UGPC meeting.

GRADUATE COLLEGE

MAR 21 2018

Received

*FAUnewcourseGrad, created Summer 2017*

| | | |
|---|---|---|
| FAU<br>FLORIDA ATLANTIC UNIVERSITY | **NEW COURSE PROPOSAL**<br>**Graduate Programs**<br>Department: Mathematical Sciences<br>College: Science<br>(To obtain a course number, contact: ...) | UPC Approval _____<br>UPS Approval _____<br>SCNS Submittal _____<br>Confirmed _____<br>Banner Posted _____<br>Catalog _____ |

| | | | |
|---|---|---|---|
| Prefix: STA<br>Number: 8230 | Lab Code: (Lab Course C = Conveyed / Received as code appropriate) | Type of Course: Lecture | Course Title: Statistical Models and Designs |
| Credits (Lecture / Lab / Contact Hours): 3<br>Effective Date (TERM & YEAR): Fall 2013 | Grading (Select Fail Option): Regular ◉ Sat/UnSat ○ | Course Description (Syllabus must be attached; see Example): This course introduces one to concepts and methods in linear statistical models in regression, analysis of variance, and experimental design. This course is intended for students in the FAU program in mathematics. | |
| Prerequisites: STA 4442 with minimum grade C or equivalent | Corequisites | Registration Controls (Check College Level) | |

Prerequisites, corequisites and registration controls are enforced for all sections of course

| | |
|---|---|
| Minimum qualifications needed to teach course: Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field) | List/Attach recommendations or pertinents affected by new course: Applied Linear Statistical Models, 5th Edition, by Kutner, Nachtsheim, Neter, and Li McGraw Hill, 2004. |
| Faculty Contact/Email/Phone: Hongwei Long@fau.edu (561) 297-3610 | List/Attach recommendations or pertinents affected by new course |

| Approved by | Date |
|---|---|
| Department Chair | |
| College Curriculum Chair | |
| College Dean | |
| UGC Chair | |
| GAC Chair | |
| Graduate College Dean | |
| Vice President | |
| Provost | |

For details from any changes in the UPC, recommendations will be made in the UPC meetings

GRADUATE COLLEGE

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FAU/newcourse/fnc, created summer 2017

# Syllabus

| 1. Course Name | Course Number | Credit Hours |
|---|---|---|
| Statistical Models and Designs | STA 6230 | 3 |

**2. Course prerequisites**

STA 4442 with minimum grade C or equivalent

**3. Course logistics**

a. Term – Fall 2018
b. Class location and time: TBA

**4. Instructor**

Name: Hongwei Long, Office SE 268
Phone: (561) 297-0810, fax (561) 297-2436
E-mail: hlong@fau.edu

**5. Course description**

This course introduces basic concepts and methods in linear statistical models for regression, analysis of variance, and experimental design. Topics include simple linear regression, multiple linear regression, model selection and validation, design and analysis of single-factor studies, analysis of variance and covariance, randomized complete block designs, random and mixed effects models. Statistical software will be used for data analysis.

**6. Course objectives**

Students who successfully complete this course will be able to:

- Use suitable statistical methods to perform data analysis.
- Estimate the effects of possible factors on a response.
- Build statistical regression models and conduct model selection and validation.
- Carry out statistical design of scientific studies.

**7. Course evaluation method**

The course grade will be based on the following weights:
30% Homework, 30% Midterm Exam, and 40% Final Project

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8. **Course grading scale**

| Cumulative Performance | Grade |
|---|---|
| 90%-100% | A |
| 88% - 89% | A- |
| 85% - 87% | B+ |
| 80% - 84% | B |
| 78% - 79% | B- |
| 75% - 77% | C+ |
| 70% - 74% | C |
| 65% - 69% | C- |
| 60% - 64% | D |
| 0% - 59% | F |

9. **Policy on makeup tests, late work, and incompletes**

Make-up exams will be given only under exceptional circumstance, and written, verifiable excuses must be provided in advance of the scheduled exams. No late work will be accepted. Grades of Incomplete ("I") are reserved for students who are passing a course but have not completed all the required work because of exceptional circumstances. A grade of "I" 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 must 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.

10. **Classroom etiquette policy**

University policy on the use of electronic devices states: "In order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular telephones and pagers, are to be disabled in class sessions."

11. **Disability policy statement**

In compliance with the Americans with Disabilities Act (ADA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Service (SAS) ---in Boca Raton, SU 133 (561-297-3880); in Davie, LA 203 (954-236-1222); or in Jupiter, SR 110 (561-799-8585)---and follow all SAS procedures.

12. **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

13. **FAU's Counseling and Psychological Services**

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to

consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services -- individual counseling, support meetings, and psychiatric services, to name a few -- offered to help improve and maintain emotional wellbeing. For more information, go to http://www.fau.edu/counseling/

## 14. Required texts/readings

***Applied Linear Statistical Models***, 5th Edition, by Kutner, Nachtsheim, Neter, and Li. ISBN: 978-0073108742, McGraw Hill, 2004.

## 15. Exams and assignments

There will be one midterm exam and one final project on the scheduled dates. All exams are closed books and notes. Homework will be assigned frequently and should be handed in on the due dates. Late assignments will not be accepted.

## 16. Course topical outline

| Week | Topics |
|---|---|
| 1 | Simple linear regression |
| 2 | Inference in regression and correlation analysis |
| 3 | Diagnostics and remedial measures |
| 4 | Simultaneous inferences in regression analysis |
| 5 | Matrix approach to simple linear regression analysis |
| 6 | Multiple linear regression |
| 7 | Model selection and validation |
| 8 | Design and analysis of single-factor studies |
| 9 | ANOVA diagnostics and remedial measures |
| 10 | Two-factor studies with equal sample sizes |
| 11 | Randomized complete block designs |
| 12 | Analysis of covariance |
| 13 | Two-factor studies with unequal sample sizes |
| 14 | Multi-factor studies |
| 15 | Random and mixed effects models |

## Nancy Condemi

**From:** Ken Dawson-Scully <dawsonscully@gmail.com>
**Sent:** Wednesday, March 21, 2018 2:30 PM
**To:** Nancy Condemi
**Subject:** Fwd: STA 6230

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Ken Dawson-Scully MSc PhD

Associate Professor
Department of Biological Sciences,
Charles E. Schmidt College of Science,
Florida Atlantic University,
777 Glades Road,
Boca Raton FL, 33431, USA
Telephone: (561) 297-0337 -- Fax (561) 297-2749
Email: ken.dawson-scully@fau.edu

Begin forwarded message:

> **From:** Yuan Wang <ywang@fau.edu>
> **Date:** March 19, 2018 at 2:57:18 PM EDT
> **To:** Ken Dawson-Scully <ken.dawson-scully@fau.edu>
> **Subject: Fwd: RE: STA 6230**
>
> Hello Ken,
>
> This is about our new course proposal STA 6230 (the one that came up in the last day). As you can see below, our dept contacted the College of Education, and it doesn't seem to be any issue from the College of Education.
>
> I see that the meeting of the university Graduate Committee is about to have a meeting. I'm not sure if this piece of information should be included in our course proposal. I can print a hard copy and leave it in your mbox if needed. Just let me know.
>
> Thank you.
> Yuan
>
> -------- Forwarded Message --------
>
> **Subject:**RE: STA 6230

**Date:**Sat, 10 Mar 2018 14:59:34 -0500
**From:**John Morris <JDMORRIS@fau.edu>
**To:**Stephen Locke <lockes@fau.edu>, Yuan Wang <YWANG@fau.edu>
**CC:**Robert Shockley <SHOCKLEY@fau.edu>

Stephen,

This appears to be a standard course in linear models, and as such, is useful for all to draw upon. For my part, I see no conflict and fully support the offering from Mathematics. As you know, statistics is a content area that tends to promulgate across a university, but as long as appropriate expertise can be mustered wherever courses are housed, I believe quality is served. That expertise, wherever it is found at FAU could not possibly find conflict with Mathematics offering a course in linear models.

I am forwarding my response to Bob Shockley, our department chair, as he, I think, would be the official to respond to curriculum committee concerns.

Dan

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**From:** Stephen Locke
**Sent:** Friday, March 9, 2018 3:17 PM
**To:** Yuan Wang <YWANG@fau.edu>; John Morris <JDMORRIS@fau.edu>
**Subject:** Fw: STA 6230

Dan,

We're putting a statistics course into our M.S.T. rotation. Attached is the course description and cover form. Please let Professor Wang know if there are any concerns from your college.

Also, if you have suggestions for any other department at FAU we should send a copy of the syllabus, please let me know, or let Professor Wang know.

Thanks,

Stephen