**Syllabus**

1. **Course Name Course Number Credit Hours**

**Applied Statistics 1 Lab STA 4202L 1**

1. **Course prerequisites**

 STA 4442 (Minimum Grade C)

1. **Course corequisite**

STA 4234

1. **Instructor**

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1. **Course description**

 This is a first course in regression analysis. Regression analysis explores relationships

 among variables by modeling a response. The course focuses on data analysis, statistical

 graphs, and diagnostics via personal computing.

1. **Course objectives**

The students are expected to gain a firm understanding of the basic principles necessary to apply regression model-building techniques in a wide variety of application environments.

1. **Assessment Procedure and Grading**

There will be six take-home homework assignments accounting for 30% of your cumulative performance, four in-class quizzes accounting for 20% of your cumulative performance, a midterm exam accounting for 20% 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**  |
| > 93%  | A  |
| > 90% – 93%  | A−  |
| > 87% – 90%  | B+  |
| > 83% – 87%  | B  |
| > 80% – 83%  | B−  |
| > 77% – 80%  | C+  |
| > 73% – 77%  | C  |
| > 70% – 73%  | C−  |
| > 67% – 70%  | D+  |
| > 63% – 67%  | D  |
| ≥ 60% – 63%  | D−  |
| <60%  | F  |

1. **Incomplete 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.

1. **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.

1. **Method of Instruction**

The course is conducted in lectures combined with lab sessions. Assignments may require the use of a statistical software package.

1. **Disability policy statement**

 In compliance with the Americans with Disabilities Act (ADA), students who require

 special accommodation due to a disability to properly execute coursework must register with

 the Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices

 across three of FAU campuses-Boca Raton, Davie, and Jupiter-however disability services

 are available for students on all campuses.

1. **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>

1. **Required texts/readings**

 ***Introduction to Linear Regression Analysis***, 5th Edition, by Douglas C.

 Montgomery, Elizabeth A. Peck, and G. Geoffrey Vining, John Wiley, 2012,

 ISBN: 978-0-470-54281-1.

1. **Course topical outline**

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| --- | --- |
|  Week  | Topics |
|  1 | Introduction to regression |
|  2 | Simple linear regression |
|  3 | Estimation by maximum likelihood |
|  4 | Multiple linear regression |
|  5  | Confidence intervals in multiple regression |
|  6 | Model adequacy checking |
|  7 | Transformations and weighting to correct model inadequacies |
|  8  | Generalized and weighted least squares |
|  9 | Diagnostics for leverage and influence |
|  10 | Polynomial regression models |
|  11 | Indicator variables |
|  12 | Multicollinearity |
|  13 | Variable selection and model building |
|  14 | Validation of regression models |
|  15 | Introduction to nonlinear regression |