

# Course Syllabus

Fall 2018

STA 2023 Introductory Statistics (3 credits) CRN#: 1085 Section #: 001

**Required Website:** Introduction to Data Mining via LiMeS at [www.Limes.one](http://www.Limes.one)

**Note: Purchase required.**

**Prerequisite:** MAT 1033 or MAC 1105 or MGF 1106 or MAC 2233 (grade of C or better)

**Instructor:** Dr. Barry Booton

**Office location:** SE 286

**E-mail Address:** [bbooton@fau.edu](mailto:bbooton@fau.edu)

**Office hours:** MWF 3:00-4:00pm

**Lab location & hours:** SE 330/340/350, F 8:00-9:50am **Lecture location & hours:** GS 120, R 9 – 9:50am

**120-minute cumulative Final Exam date, time & location: Friday, 12/7, 8:00-10:15am, SE 330/340/350**

## **Course Description:**

STA 2023 is an introductory statistics course covering basic data analysis, data and chart manipulation, basic probability theories and simple simulations, T-tests, regression, multiple regression, confidence intervals and normal distribution. Laboratory required.

## **Topics Covered:**

Basic and descriptive statistics: mean, median, standard deviation, range, pie and bar chart, basic data manipulation and sampling procedures. Probability: uniform, binomial, and normal distributions, sampling distributions and some basic probability computations. Inference: statistical/hypothesis testing, one-sided and two-sided t-test, confidence interval, interpretation of P-value. Basic regression: slope and intercept interpretation, correlation coefficient, P-value, standard error.

## **Software:**

Required website: Introduction to Data Mining via LiMeS at [www.limes.one](http://www.limes.one). Go to Canvas course site for instructions to register with LiMeS. **Note: Purchase required. Available via online and in the FAU bookstore. There is a 21-day trial period. Plan to pay before the trial period is over to avoid missing any assessments and a \$10 handling fee.**

## **Technology:**

This course will be mostly conducted using the Excel software package on Windows-based machines. The computers and the software will be provided in the lab SE 330/340/350. Students are required to obtain their own Excel software licenses or obtain it for free at <http://www.fau.edu/oit/getoffice365/>

## **Objectives, Learning Outcome Goals:**

This course aims to impart an understanding of elementary descriptive and inferential statistics. The emphasis will be on applied problem solving and interpretation of results, although computation will also be required. Students who successfully complete this course should be able to calculate and explain basic descriptive statistics as well as basics probability theories; generate and interpret tables and graphs using Excel; make estimates of unknown parameters and conduct hypothesis tests by performing t-tests on Excel; and using Excel to construct and interpret a simple linear regression model. Successful completion of this course counts toward the computational requirement of the Gordon Rule.

## **IFP General Education Outcomes:**

1. Knowledge in several different disciplines;
2. The ability to think critically;
3. The ability to communicate effectively;
4. An appreciation for how knowledge is discovered, challenged, and transformed as it advances; and
5. An understanding of ethics and ethical behavior.

Information available at <http://www.fau.edu/deanugstudies/NewGeneralEdCurriculum.php>

## **General Education:**

This course satisfies, in part, the general education requirements for Foundations of Mathematics and Quantitative Reasoning. [http://www.science.fau.edu/student\\_services/student\\_info\\_gen\\_edu.php](http://www.science.fau.edu/student_services/student_info_gen_edu.php)

### Course Structure:

- 1) **All students** are scheduled to attend one 50-minute lecture at the designated lecture hall and one 110-minute laboratory session in the SE 330/340/350 computer laboratory each week.
- 2) During the 50-minute lecture, content will be introduced and analysis using Excel will be demonstrated.
- 3) It is **strongly recommended** that students keep a notebook for their lecture notes so that they can readily review their work prior to the labs/exams, especially if there are lapses in internet access and outages.
- 4) Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined in the syllabus. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. **Sporadic attendance quizzes may be given throughout the semester. The instructor reserves the right to remove students from the lecture room for behavior that the instructor perceives as inappropriate and a distraction to other students.**
- 5) Note: If a student misses a lecture, it is the student's responsibility to get the notes from classmates, not the instructor.
- 6) During the 110-minute laboratory session the lecture content will then be tested **from performance on Excel. Weekly lab quizzes and three unit exams & a cumulative final will be administered during the lab sessions unless stated otherwise.** Calculators are NOT allowed during exams. Check the course calendar for dates of the exams.
- 7) Students are expected to follow the posted rules and regulations in the lab and chronic violators may be ejected by the instructor or the assistants in charge.
- 8) Students are not allowed to leave the lab prior to the 110 minutes unless permitted by the instructor. Students should work on their homework once the lab quizzes are completed. Lab attendance will be taken at the end of the lab session. Failure to take lab attendance will result in a zero grade in lab quizzes.
- 9) Students should review their website, lecture notes and practice statistical analysis in Excel (home computer or any open computer lab in campus) to participate in laboratory testing.
- 10) Tutors are the instructor's assistants to help proctor and facilitate the lab. They are not there to provide mini lectures and answers for students.
- 11) Homework is assigned and it is students' responsibility to submit the homework within the due date. Plan to complete the homework **before its due date** because lapses in internet access and outages are **NOT** valid excuses for incomplete assignments.
- 12) Missing a laboratory session (weekly quizzes) will result in a zero grade on that particular laboratory session and students should review the missed lab in order to keep up with the content.
- 13) Students should check Canvas/course website/FAU e-mail/[www.Limes.one](http://www.Limes.one) for updated information daily. Ignorance of posted information is NOT a valid excuse for missing assignments or exams.

### Final Grade Components and their Weights in the overall Course Grade:

Each of the three modules will be assessed by a unit exam followed by a cumulative final.

Note: The labs contribute to 20% of the grade and students can drop the lowest 20% of the lab scores. However, the maximum grade for total lab contribution cannot be more than 100%. (Example: if your average lab grade is 110 that will be converted into 100 points)

Component	Weight
Module 1 Exam 1 (60 mins) Friday, 9/21, 8:00-9:50am, SE 330/340/350	20%
Module 2 Exam 2 (60 mins) Friday, 10/12, 8:00-9:50am, SE 330/340/350	20%
Module 3 Exam 3 (60 mins) Friday, 11/30, 8:00-9:50am, SE 330/340/350	20%
Cumulative Final (120 mins) Friday, 12/7, 8:00-10:15am, SE 330/340/350	15%
Lab Sessions (drop lowest 20%)	20%
Homework (drop lowest 25%)	3%
Attendance (lectures & labs)	2%

### **Letter Grading Scale:**

	B+: 84-86	C+: 74-76	D+: 64-66	
A: 90-100	B: 80-83	C: 70-73	D: 60-63	F: 0-56
A-: 87-89	B-: 77-79	C-: 67-69	D-: 57-59	

*Module 1. Introduction to Data Analysis and basic probability theory.* Students who successfully complete this module will master the following concepts:

1. Uploading data into Excel, chart manipulation
2. Random Number generation and statistical simulations
3. Basic concepts of regression analysis and interpretation of regression analysis printouts
4. Basic probability theory

*Time frame:* 4-5 weeks

Assessment: This module will be followed by the first unit exam.

*Module 2. Regression and Correlation.* Students who successfully complete this module will master the following concepts:

- 1 Multiple Regressions
- 2 *P*-values
- 3 Correlation Coefficient

*Time frame:* 3-4 weeks

Assessment: This module will be followed by the second unit exam.

*Module 3. T-test and related concepts and more basic probability theories.* Students who successfully complete this module will master the following concepts:

1. Performing the tests
2. Interpretation of *P*-value, confidence interval
3. Understanding the various versions of statistical tests: t-test, regression, confidence interval etc
4. Basic probability theories

*Time frame:* 4-5 weeks

Assessment: This module will be followed by the third unit exam.

### **Attendance Policy:**

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of nonattendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations, or participation in University-approved activities. Examples of University approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances, and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absence and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

### **Makeup policy:**

**Labs, unit exams, and the Final Exam:** There is a very restrictive make-up policy in place. Any student missing a lab or an exam without an official excuse will receive a zero grade. Any excusable absence must be documented by a verifiable source, and the instructor should be notified AT LEAST ONE WEEK prior to the lab or exam date. If a student is absent from a lab or exam due to an emergency, such as a car accident and sickness, the instructor must be notified WITHIN 24 HOURS after the lab or exam, and written verifiable documentation is required. Students will not be penalized for absences due to participation in University-approved activities provided they notify their instructor and make appropriate arrangements well in advance of the lab or exam. Similarly, reasonable

accommodations will be made for students participating in a religious observance. A make-up must be completed within one week of the lab or exam date, except in extraordinary circumstances.

**Final Exam as a makeup test.** There is a very generous make-up policy in place. The Final Exam will consist of three parts, Parts I, II & III, each of which will cover the materials from Exams 1, 2 & 3. We will use parts of the final to make up any of the exams. Example: if a student scores better on any of the parts of final then the exam grade will be replaced with this better score. A missing exam can be replaced as well.

#### **Netiquette (Internet Etiquette):**

Consult <http://www.fau.edu/irm/about/netiquette.php> for the conventions of politeness pertaining to e-mail and technology use.

#### **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](http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf)

#### **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 Services (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.

#### **Counseling and Psychological Services (CAPS) Center:**

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 well-being. For more information, go to <http://www.fau.edu/counseling/>

#### **Support Services:**

**FREE MATH TUTORING for FAU students:** The MLC provides the following **FREE** academic support services for FAU students:

1. Drop-in tutoring in the MLC GS211 during all hours of operation: Monday – Thursday: 9am – 6pm, Friday: 9am – 4pm, and Sunday: 1pm – 5pm.
2. Small group tutoring by appointment: appointments can be made in TutorTrac. Go to <https://tutoring.fau.edu> and log in with your FAU ID and password and click on 'Search for Availabilities.' For center, choose Math Learning Center. Choose your Section (Class) and click 'Search.' Choose your time and then click 'Save.' If there are no appointments listed for your course, please email [mlc@fau.edu](mailto:mlc@fau.edu) and request an appointment.

#### **Withdrawals and Incompletes:**

Students are responsible for withdrawing themselves from this course if that is what their personal situation requires. The instructor makes no promise either implicit or explicit to withdraw students from the course. Students who wish to drop from the course, should do so before the official university deadlines. **(Friday, August 24, 2018 (no consequences); Friday, November 16, 2018 (without receiving an "F").**

**Incompletes** are discouraged. They will be given **ONLY** when extraordinary events intervene the completion of the course.

#### **Missing Lessons:**

Due to unforeseen reasons or due to holidays, the instructors might be unable to cover the class "in person." If the mentioned lecture is a lesson, it will be assigned as a take home reading project and if it is a lab, the students will be required to complete the task online.

**Royalties:**

All the royalties related to the material of this course (and/or website [www.Limes.one](http://www.Limes.one)) collected from FAU students are placed in Greatest Educational Needs Scholarship Fund.

**This syllabus is subject to reasonable changes at the direction of the coordinator/ instructor.**