

**DEPARTMENT OF STATISTICS****STA 1013 – STATISTICS THROUGH EXAMPLES****SEC 14 SYLLABUS SPRING, 2019****3 SEM HRS CREDIT****CLASSES MEET JAN 7th to APRIL 26th****T, R – 6:45 —8:00 pm Rm 108 OSB****FINAL EXAM: April 30th : 8:00 – 10 PM****Location : Usual class room (Rm 108 of OSB)**

INSTRUCTOR INFO

Instructor: Ms. Piyali Basak Office location: Rm 104E OSB

Email pb15d@my.fsu.edu Office Hours : To be announced every week.

Please check the university learning management system every day for announcements.

SYLLABUS CHANGE POLICY

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

~ The syllabus is intended to be an agreement between you (student) and us (instructor).

~ The presence of your name on your section roster after drop/add ends indicates that you have read and understood all of the information and documents posted under Syllabus on our STA 1013 Spring,19 website on the university learning management system, you have had your questions about them answered, and you accept and will abide by our policies.

~ Please understand that we deal with hundreds of students each semester, and in the interests of fairness, we will not do for one student what we cannot do for all students who are likely to request the same.

~ Bear in mind that the opportunities presented in this class are made equally available to all students in the class and it is up to each individual to make the best of them.

Sexual Misconduct and Title IX Reporting

As an instructor, I am obliged to report all instances of sexual misconduct that I become aware of; I cannot hold such information confidential. If you would like to discuss your situation in confidence, you may contact the Victim Advocate Program (<https://dos.fsu.edu/vap/>), the University Counseling Center (<https://counseling.fsu.edu/>), the Employee Assistance Program (<https://eap.fsu.edu/>), or University Health Services (<https://uhs.fsu.edu/>).

LIBERAL STUDIES FOR THE 21st CENTURY:

Quantitative and Logical Claims

The Liberal Studies for the 21st Century Program at Florida State University builds an educational foundation that will enable FSU graduates to thrive both intellectually and materially and to support themselves, their families, and their communities through a broad and critical engagement with the world in which they live and work. Liberal Studies offers a transformative experience; this course has been approved as meeting the Liberal Studies requirements and thus is designed to help you become a critical analyzer of quantitative and logical claims.

In order to fulfill the State of Florida's College mathematics and computation requirement the student must earn a "C" or better in the course.

COURSE DESCRIPTION

Prerequisite: None.

Credit Hours: 3

This course provides students with a background in applied statistical reasoning. Fundamental topics are covered including graphical and numerical description of data, understanding randomness, central tendency, correlation versus causation, line of best fit, estimation of proportions, and statistical testing.

Statistical thinking, relevant ideas, themes, and concepts are emphasized over mathematical calculation. In this class students learn many of the elementary principles that underlie collecting data, organizing it, summarizing it, and drawing conclusions from it.

COURSE OBJECTIVES:

This course has been approved to meet FSU's Liberal Studies Quantitative and Logical Thinking requirements and is designed to help you become a critical analyst of quantitative and logical claims.

In order to fulfill the State of Florida's College mathematics and computation requirement the student must earn a "C-" or better in the course.

By the end of the course, students will demonstrate the ability to:

- (1) Select and apply appropriate methods (i.e., mathematical, statistical, logical, and/or computational models or principles) to solve real-world problems.
- (2) Use a variety of forms to represent problems and their solutions.

The above two competencies will be assessed in the Liberal Studies Quantitative Assessment for STA 1013, which includes a written summary of results.

- (3) Apply sound concepts of sample selection and experimental design in producing data.
- (4) Use statistical thinking in the context of work processes, academic endeavors, and everyday life.
- (5) Describe how inferential statistical methods are used to make valid judgments based on the data.
- (6) Evaluate the validity of statistical results with skepticism based on sensible considerations.

COURSE TOPIC:

- Terminology/Initial Ideas: statistical study process
- Terminology/Initial Ideas: population, sample, parameter, statistic, categorical, quantitative
- Simple random sample
- Sampling: systematic, stratified, cluster, convenience
- Graphs: histograms (sketch and interpret)
- Graphs: stemplots (sketch and interpret)
- Graphs: bar charts (sketch and interpret), pie charts (interpret)
- Summary Statistics: mode
- Summary Statistics: mean, quartiles, range, standard deviation, five-number summary, boxplot
- Empirical Rule
- Normal Distributions: forward problems (finding area under the curve/percentage of data)
- Central Limit Theorem: sampling distributions of \bar{x} , features of the distributions and implications when using a larger/smaller sample to estimate μ , forward problems (finding probabilities)
- Probability: random processes, four rules, probability models, addition rule for mutually exclusive events
- Random Variables: definition, expected value
- One-sample mean: obtain and interpret z-intervals
- One-sample mean: carry out and interpret results of z-test, interpret P-value
- One-proportion: z-intervals and z-tests
- Correlation: what the sign and absolute value of r imply, correlation does not imply cause-and-effect
- Simple Linear Regression: read scatterplots, given equation make prediction, interpret R^2

REQUIRED MATERIALS

You will need to read each set of class notes carefully after we cover them in lecture.

Recommended Textbook : Statistical Reasoning for Everyday Life, Fifth Edition 2018,

by Bennet Briggs Triola

Class notes: You will need to print out class notes from our the university learning management system STA class website

and bring them to class on a regular basis, so please budget some money for printing.

Writing materials: Notepaper and sharpened pencils.

Calculator: TI-84 Plus or equivalent.

ATTENDANCE, ABSENCE AND DROP/WITHDRAWAL

~ We fully expect to see you at every class meeting. First-day attendance will be taken electronically via the university learning management system, however we still expect to see you in class on the first day.

~ Drop and Withdrawal deadlines are given in the University's academic calendar at http://registrar.fsu.edu/dir_class/spring/acad_cal.htm.

~ If you miss class, I expect you to keep up-to-date with the lessons, activities and announcements by getting in touch with a classmate or with me.

~ If you miss any quiz, immediately email me. You will be allowed to make up a quiz (within 1 week) only with documentation.

Final Exam Rescheduling Policy

You may not take the final exam before final exams week. Individual students who need to reschedule the final exam for a different time during final exams week will need to

- (i) talk to me about it first and get my permission to reschedule,
- (ii) fill out the "Request to Reschedule Final Examination" form at <https://artsandsciences.fsu.edu/students/undergraduate/forms-requiring-deans-approval/rescheduling-final-examination> and take it to the Dean of Arts and Sciences office at 010 LON to get it approved, and
- (iii) bring the approved form back to me by the last day of classes.

If you experience a documented emergency that prevents you from observing the above deadline, contact me as soon as you are able to, and we'll take it from there.

EMAIL & COMMUNICATION

~ please check the Class website in the university learning management system every day to keep up with what's happening in class

~ please check your @my.fsu.edu email every day for emails from us

~ if you email us, please send from your @my.fsu.edu account

~ always include your name, and section when you send email to me.

~ be aware that email sent from outside the FSU domain may not get through to us, so if you send an email and you don't get a response within two working days, please try to meet me in person before class, or after class, or during office hours.

Note on Technology-dependent Assessments

This course is heavily technology-dependent. While we will do our best to work with you on technology issues, please be aware that if you take an assessment but we can find absolutely no record of the fact, then we will not be able to give you credit for it.

ASSESSMENT AND GRADING

WE WILL ALLOW ABSOLUTELY NO MAKE-UPS, NO EXTRA CREDIT ASSIGNMENTS, AND IN GENERAL, NO OPPORTUNITIES FOR GRADE IMPROVEMENT, AFTER THE LAST DAY OF CLASS, SO PLEASE DO YOUR BEST DURING THE TERM.

We reserve the right to impose a penalty on your assessment grade if you violate any of the guidelines below. Please read this entire policy carefully and understand it well, as exceptions will not be allowed.

MARKS DISTRIBUTION :

ATTENDANCE – 10% (THERE WILL BE RANDOM ATTENDANCE CHECKS.)

QUIZ 1 – 4 : - 18% EACH - (DATES TO BE ANNOUNCED.)

FINAL EXAM : 18 % - (DATES TO BE ANNOUNCED.)

LETTER GRADE :

A : ≥ 90

A- : 80-89

B : 70-79

B- : 60-69

C : 50-59

C- : 40-49

D : 30-39

F : < 30

(Final scores at the end of the semester will be rounded to the nearest integer before calculating the letter grades.)

TENTATIVE PACING SCHEDULE :

WEEK 1	8 TH JAN SUMMARY STATISTICS	10 TH JAN SUMMARY STATISTICS
WEEK 2	15 TH JAN SUMMARY STATISTICS	17 TH JAN EMPIRICAL RULE
WEEK 3	22 ND JAN REVIEW FOR QUIZ 1	24TH JAN <u>QUIZ 1</u>
WEEK 4	29 TH JAN NORMAL DISTRIBUTION	31 ST JAN NORMAL DISTRIBUTION
WEEK 5	5 TH FEB NORMAL DISTRIBUTION	7 TH FEB CLT
WEEK 6	12 TH FEB CLT	14 TH FEB REVIEW FOR QUIZ 2
WEEK 7	<u>19TH FEB</u> <u>QUIZ 2</u>	21 ST FEB PROBABILITY
WEEK 8	26 TH FEB PROBABILITY	28 TH FEB RANDOM VARIABLES
WEEK 9	5 TH MAR RANDOM VARIABLES	7 TH MAR RANDOM VARIABLES
WEEK 10	12 TH MAR REVIEW FOR QUIZ 3	14TH MAR <u>QUIZ 3</u>
WEEK 11	19 TH MAR SPRING BREAK – NO CLASS	21 ST MAR SPRING BREAK – NO CLASS
WEEK 12	26 TH MAR ONE SAMPLE HYPOTHESIS TESTING	28 TH MAR ONE SAMPLE HYPOTHESIS TESTING
WEEK 13	2 ND APR ONE SAMPLE CONFIDENCE INTERVAL	4 TH APR ONE SAMPLE CONFIDENCE INTERVAL
WEEK 14	9 TH APR REVIEW FOR QUIZ 4	11TH APR <u>QUIZ 4</u>
WEEK 15	16 TH APR SLR	18 TH APR SLR
WEEK 16	23 RD APR SLR	<u>25TH APR</u> <u>FINAL REVIEW</u>

During exams, I will ask you to move to another seat if I suspect that you, or persons around you, are cheating. This will be a subjective judgment on my part.	
Materials that you need to bring for a quiz	calculator, and a watch to keep track of time, 1 page (two sides) hand-written notes. You may not share your calculator.
Materials that you need to bring for your final exam	calculator, and a watch to keep track of time, 2 pages (four sides) hand-written notes. You may not share your calculator.
Materials that are <u>not</u> permitted	course materials such as class notes, exercises, etc; cell phones and other remote communication devices You may not use a cell phone as a calculator.

Test Question Security

A pledge regarding the confidentiality of the exam will be printed on every EXAM (wording may vary slightly). We regret to say that if you do not sign the pledge, we will not grade your paper and your grade will be zero. Please bear in mind that occurrences such as midterm or final exam question disclosures reduce the worth of the degree that you are working toward.

Missing Grades

- ~ be sure to attend the section in which you are enrolled to avoid missing grade issues
- ~ if a grade is not posted, let me know immediately via email. Make sure, you let me know about any such discrepancies within a week for all the exams .

Grading Appeals

During the course of the term, if you believe that a paper was improperly graded, make an appointment to come to my office to see your paper and discuss it with me.

Receiving a grade of “Incomplete”

A request for a grade of “Incomplete” will

- ~ NOT be granted if you have completed all of the coursework.
- ~ be granted only if both of the following conditions are satisfied:
 - (1) you have completed all the exams , and
 - (2) your overall average excluding the final exam is a passing grade.

STUDENTS SWITCHING SECTIONS

When you switch sections, your grades are permanently deleted from your old university learning management system section website. Always inform us before you switch so that we may keep a copy of your previously earned grades.

STUDENTS COMPLETING AN INCOMPLETE OR AUDITING

If you are auditing this course or attending it to complete an "Incomplete" earned in a previous term, make yourself known to me so that I may let you have access to our current university learning management system websites. If you are auditing, you must register with the University to do so. If you are completing an "Incomplete", let me know who your former instructor was so that I may inform them of your grade at the end of the term.

University Attendance Policy:

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Academic Honor Policy:

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at FloridaStateUniversity." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>.)

Americans With Disabilities Act:

Students with disabilities needing academic accommodation should:

- (1) register with and provide documentation to the StudentDisabilityResourceCenter; and
- (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center

874 Traditions Way

108 Student Services Building

Florida State University

Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

sdrc@admin.fsu.edu

<http://www.disabilitycenter.fsu.edu/>