



Department of Statistics  
STA2122-0014/0015, Fall 2020

**Introduction to Applied Statistics**  
**3 Credit Hours**



**Quantitative and  
Logical Thinking**

<b>Classes</b>	All classes of this course will be taught <b>remotely</b> and <b>asynchronously</b> on Canvas ( <a href="https://canvas.fsu.edu/">https://canvas.fsu.edu/</a> ) from August 24th to December 4th, 2020.  <b>Honorlock</b> will <b>NOT</b> be used for this course.
<b>Instructor</b>	<b>Name:</b> Mr. Shubo Tian <b>Email:</b> st17g@my.fsu.edu
<b>Office Hours</b>	Tue, 1:00-3:00PM, or by Appointment  Office hours will be on Zoom (use the Zoom link in the left sided Navigation Menu of the course on Canvas)

### 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.

The purpose of this course is to prepare students for further study and job preparation in the field of Natural Sciences. It will emphasize understanding of data and interpretation of statistical analyses. It will require students to think of data, and report the results of their analyses, in context.

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.
- (3) Use descriptive statistics and graphical methods to summarize data accurately.
- (4) Use inferential statistics to make valid judgments based on the data available.
- (5) Select the appropriate statistical tools to analyze a particular problem.
- (6) Describe the goals of various statistical methodologies conceptually.
- (7) Develop a healthy skepticism toward statistical studies and their results based on a sensible consideration of the techniques employed.

### **Prerequisite**

A grade of “C-“ or better in MAC 1105 College Algebra (or equivalent).

*Special Note: Subsequent credit for STA 5126 is not permitted. No credit given for STA 2122 if a grade of “C-“ or better is earned in STA 2171, STA 3032 or QMB 3200.*

### **Course Topics**

The course covers Normal distributions, sampling variation, confidence intervals, hypothesis testing, one-way and two-way analysis of variance, correlation, simple and multiple regression, contingency tables and chi-square tests, non-parametric statistics. Specific topics include:

- (1) Visualizing Data with Graphs
- (2) Summary Statistics
- (3) Normal Distributions
- (4) Central Limit Theorem
- (5) One-sample Confidence Intervals
- (6) One-sample Hypothesis Tests
- (7) One-way ANOVA
- (8) Simple Linear Regression
- (9) Chi-square Tests
- (10) Multiple Regression
- (11) Two-way ANOVA
- (12) Nonparametric Tests

### **Required Materials**

A personal computer, reliable internet connection, and Chrome or Firefox browser (Please DO NOT USE SAFARI. SAFARI is not well supported on Canvas).

A TI-84 Plus or equivalent calculator. We will help you learn how to use a TI-84 series calculator. We cannot promise to be able to help with any other type of calculator.

### **Optional Materials**

Materials for Taking Notes: Access to a printer, paper and writing materials, or a tablet allowing for making handwritten notes on a pdf document. Lecture notes and handouts will be provided for this course on Canvas. You may want to write your notes (on paper or on tablet) to aid your learning as you watch the lecture videos.

Textbook: Introduction to the Practice of Statistics (9th Edition), 2017, by Moore McCabe Craig, Publisher: Macmillan W.H.Freeman

### 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.

#### Assessments

Assessments for this course include 15 **open quizzes**, 10 **timed quizzes** and a **timed Liberal Studies Quantitative Assessment (LSQA)**. Open quizzes are timed and can be completed with unlimited attempts, while timed quizzes and the LSQA are timed and can be completed in 2 attempts. Two open quizzes with lowest scores and one timed quiz with lowest score will be dropped and not included in calculation of the final grade.

Score of each quiz will be convert into a percentage after graded. For each quiz type an average score will be calculated for quizzes included for calculation of the final grade. The final grade will consist of the following marks:

Assessment	Weight
Open Quizzes, timed, unlimited attempts each, lowest two dropped	25%
Timed Quizzes, timed, 2 attempts each, collaboration <b>NOT</b> allowed, lowest one dropped	65%
LSQA, timed, 2 attempts, collaboration <b>NOT</b> allowed, cannot be dropped	10%
<b>Total</b>	<b>100%</b>

Quizzes that are not submitted will receive a grade of zero. When a makeup is submitted, the zero will be replaced with the earned grade. **All quizzes will be open-notes**. Due date will be given to each quiz when it is published.

#### 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. Please **DO NOT USE SAFARI** when you take assessments on Canvas – please use Chrome or Firefox.

#### Grading

The final letter grade will be selected from the table below after rounding the overall numerical course grade UP to the next higher whole number.

F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A
<60	60-62	63-66	67-69	70-72	73-76	77-79	80-82	83-86	87-89	90-92	>92

### Grade Review

If you believe that a correct answer was counted as incorrect on a quiz, please email the instructor about it within 24 hours after you submit the quiz. If it turns out that your answer was correct, you will be given credit for it.

### Receiving a grade of “Incomplete”

A request for a grade of “Incomplete” will

- NOT be granted if you have completed the coursework, including the final quiz and excluding the allowable absences.
- be granted only if both of the following conditions are satisfied:
  - (1) the only assessment that you have yet to take is the final quiz, and
  - (2) your overall average excluding the final quiz is a passing grade (70% or above).

### How to successfully complete this class

For each topic:

- watch the relevant lecture video(s),
- if you are able to, fill in the blank notes (on paper or on tablet) as you watch the video(s),
- study thoroughly the information and examples in the filled-in class notes – be aware that the notes are incomplete without the filled-in examples,
- attempt the relevant Open Quiz once,
- do all of the try-on-your-own exercises in the notes,
- do all of the extra/investigative exercises posted with the notes,
- study the solutions even if you get the answers right because the solutions can provide insights to the problems,
- make sure you know how to use your calculator appropriately,
- go back and finish up the relevant Open Quiz, then
- take the relevant Timed Quiz.

**Remember that you can email us or come to office hours if you need help.**

### Lecture Videos

Watching the lecture videos is equivalent to attending class and listening to lectures. We acknowledge that the lecture videos are not short, but remember that class time would have been 50 or 75 mins - not short either. On the bright side, however, you may pause the video at any time and return to it later - you would not have been able to do that with live lectures. Therefore, we fully expect you to watch the lecture videos in their entirety. Pause whenever you need to, but always be sure to return and finish watching the video.

Recorded lectures are FSU properties and only available to students enrolled in the class. Students are not allowed to share the recorded lectures to any other people outside the class. Copyright of the recorded lectures are reserved by the instructors and FSU.

### **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.

### **Attendance, Absence and Drop/Withdrawal**

- Drop and Withdrawal deadlines are given in the University's academic calendar at <https://registrar.fsu.edu/calendar/>.
- First-day attendance will be taken electronically on the course website.
- You are expected to adhere to all assessment deadlines.
- Lack of future planning, or mismanagement of time and other resources are not acceptable reasons for missing assessment deadlines.
- 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 most of these opportunities.
- 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.
- Documentation for missing assessment deadlines will not be accepted after the Last Day of Class.

#### **Please keep in mind the 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.*

### **Email & Communication**

- Please turn on the course notifications on Canvas by going to Account / Notifications / and checking the Notify me right away option for all the items under Course Activities.
- Please use your @my.fsu.edu account for all emails and communications.
- You may expect a response to your email within two workdays.

### **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

- (1) talk to me about it first and get my permission to reschedule,
- (2) fill out the "Request to Reschedule Final Examination" form at <https://artsandsciences.fsu.edu/students/undergraduate/forms-requiring-deans-approval/rescheduling-final-examination> and get it approved by the Dean of Arts and Sciences office, and
- (3) let me have the approved form 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.

### **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 Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>).

### **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/>).

### **Americans With Disabilities Act**

Students with disabilities needing academic accommodation should:

- (1) register with and provide documentation to the Office of Accessibility Services; and
- (2) request a letter from the Office of Accessibility Services to be sent to the instructor indicating the need for accommodation and what type; and
- (3) meet (in person, via phone, email, skype, zoom, etc...) with each instructor to whom a letter of accommodation was sent to review approved accommodations.

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

For the latest version of this statement and more information about services available to FSU students with disabilities, contact the:

#### **Office of Accessibility Services**

874 Traditions Way  
108 Student Services Building  
Florida State University  
Tallahassee, FL 32306-4167  
(850) 644-9566 (voice)  
(850) 644-8504 (TDD)  
[oas@fsu.edu](mailto:oas@fsu.edu)  
<https://dsst.fsu.edu/oas/>