STA 2122 Introduction to Applied Statistics Section 0028　Fall 2018

BASIC INFORMATION:

Class time: MWF 12:20AM – 13:10PM

Class location: HCB 0217

Class **website:** Canvas

Instructor: Mr.Zhiiji Tang

E-mail: zhiji.tang@stat.fsu.edu
Office location: OSB 442
Office hour: Wed 13:30 PM –14：30PM. I may change my office hours by announcements on Canvas and email every week.
Classroom policy: Come to the class on time.
Final Exam: WED Dec 12th at 10:00am-12:00pm, location TBA

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.

COURSE DESCRIPTION:

Prerequisite: A grade of "C-" or better in MAC 1105 College Algebra (or equivalent). **Credit Hours:** 3
Special Note: No credit given for STA 2122 if a grade of "C-" or better is earned in STA 2171, STA 3032 or QMB 3200.

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.

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.

REQUIRED MATERIALS:

1. No required textbook. You will need to print out class notes from Canvas and take to class.

2. A calculator of type TI-84 Plus or equivalent is necessary.

COURSE OBJECTIVES:

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

(1) Analyze and address problems drawn from real world scenarios by applying appropriate mathematical, statistical, logical, and/or computational models or principles.

(2) Interpret and evaluate data and information as presented in a variety of modes (such as tables, graphs, and charts), using appropriate technology. They will also be able to clearly communicate a summary of their findings to peers.

The above two competencies will be assessed in the L.S. Quantitative Assessment for STA 2122, which includes a written summary of results.

(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) Describe the goals of various statistical methodologies conceptually.

(6) Apply statistical techniques in the context of business processes, everyday life, and further studies in their discipline.

(7) Develop a healthy skepticism toward statistical studies and their results based on a sensible consideration of the techniques employed.

TOPICS COVERED:

1. Terminology/Initial ideas; Simple random sample; Graphs: histograms and segmented bar charts.
2. Summary Statistic: mean, quartiles, range, standard deviation, five-number summary, boxplot, IQR, identifying outliers; Empirical rule.
3. Normal Distribution: forward and backward problems; Central Limit Theorem
4. One-sample Mean: obtain and interpret z-intervals and t-intervals, concept of confidence level, sample size calculation, carry out and interpret results of z-test, ttest and p-value; Type I & II error.
5. One-way ANOVA F-test; Two-way ANOVE F-test.
6. Correlation; Simple Linear Regression; Simple Linear Regression Inference.
7. Chi-square Test of Independence.
8. Non-parametric Tests.

EMAIL:

1. Please check your @my.fsu.edu email every day.
2. Send assessment-related questions at least 24 hours before the assessment is due to begin.
3. 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 us in person before class, or after class, or during office hours.

LIBERAL STUDIES FOR THE 21st CENTURY:

1. Quantitative and Logical Thinking
2. 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.

ATTENDANCE, ABSENCE AND DROP/WITHDRAWAL:

3. First day attendance is mandatory per university regulations.
4. Punishment will be applied to students who missed or early-leave on certain amount of lectures without documentations.
5. Drop/Withdrawal deadlines are given in the University's academic calendar at http://registrar.fsu.edu/dir_class/spring/acad_cal.htm
6. Students shall, upon notifying their instructor by formal **self-written-and-signed letter at least one week before the holiday**, be excused from class to observe a religious work-restricted holy day of their faith.

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.

ASSESSMENT:

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 give it your all during the term.

During quizzes and the final exam, we will ask you to move to another seat if we suspect that you, or persons around you, are cheating. **This will be a subjective judgment on our part.**

1. **Cumulative Final Exam** (45%)
   a. WED Dec 14th at 10:00 AM – 12:00 PM, location TBA
   b. You may use TWO hand-written two-sided 8.5"x11" sheets of notes
   c. You may bring a calculator. However, cell phone is not allowed to use as a calculator. Sharing calculator is not allowed either.
2. **Quizzes** (40%)
   a. Three quizzes during class meeting time

  b. You may use ONE hand-written two-sided 8.5"x11" sheets of notes

  c. You may bring a calculator. However, cell phone is not allowed to use as a calculator. Sharing calculator is not allowed either.

  d. The higher two grades each contribute 15%, the lowest one contributes 10%.

3. **Activities** (5%)

  a. Working on questions individually or in group in activity class. Missing or not participating will lose 1% for each activity class.

4. **Attendance** (10%)

  a. If you miss five or more classes without documents, you will not be able to get the 10%. If you miss more than three but less than five, you will get only 5%.

  b. Random attendance check.

5. **Bonus**

  a. During each recitation/activity class, there will be a few opportunities for student to offer solutions to the whole class. Each will get 1 point bonus in the final grade. Student who hasn't got bonus will get the priority to instruct.

  b. In each quiz, there will be bonus points.

6. **Plagiarism and cheating will not be tolerated and will be seriously treated.**

MISSED ASSESSMENT:

1. Quizzes

If you were absent for one of Quizzes with an acceptable documentation, you may make it up during my office hours on the following Wednesday or email me to make an appointment. Please note that (1) you can only make up one quiz, (2) you must have an acceptable documents and (3) you need to make it up within one week (before the following Thursday class).

OVERALL COURSE GRADE:

1. If you believe that a paper was improperly graded, report to me right after the class you received your homework or quiz paper. Delayed report will not be resolved.

2. If a grade is not posted within one week after homework or quiz, we will do our best to locate your missing grade. Delayed report will not be resolved.

Overall numerical course grade
=0.45*Final Exam + 0.45*Quiz Average + Attendance + Bonus Note:
rounded UP to the next higher whole number.

Letter	Final Grade	Letter	Final Grade
A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66

| B- | 80-82 | D- | 60-62 |
| C+ | 77-79 | F | 0-59 |

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.)

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.

STUDENTS SWITCHING SECTIONS:

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

AMERICANS WITH DISABILITIES ACT:

Students with disabilities needing academic accommodation should:
(1) register with and provide documentation to the Student Disability Resource Center; 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/

SCHEDULE:

	Monday	Wednesday	Friday		Monday	Wednesday	Friday
W1	Introduction Aug 27	Summary Statistics Aug 29	Summary Statistics Aug 31	W2	No class Sep 3	Normal distribution Sep 5	Activity Sep 7
W3	Normal distribution Sep 10	Normal distribution Sep 12	Central Limit Theorem Sep 14	W4	Central Limit Theorem Sep 17	Recitation Sep 19	**Quiz 1** Sep 21
W5	One-sample Confidence Interval Sep 24	One-sample Confidence Interval Sep 26	One-sample Confidence Interval Sep 28	W6	One-sample Hypothesis Tests Oct 1	One-sample Hypothesis Tests Oct 3	Activity Oct 5
W7	One-sample Hypothesis Oct 8	One-way ANOVA Oct 10	One-way ANOVA Oct 12	W8	One-way ANOVA Oct 15	Recitation Oct 17	**Quiz 2** Oct 19
W9	Two-way ANOVA Oct 22	Two-way ANOVA Oct 24	Simple Linear Regression Oct 26	W 10	Simple Linear Regression Oct 29	Simple Linear Regression Oct 31	Activity Nov 2
W 11	SLR Inference Nov 5	SLR Inference Nov 7	Multiple Regression Nov 9	W 12	No class Nov 12	Recitation Nov 14	**Quiz 3** Nov 16

W 13	Special topic Nov 19	No class Nov 21	No class. Nov 23	W 14	Chi-square Test Nov 26	Chi-square Test Nov 28	Activity Nov 30
W 15	Non-parametric Tests Dec 3	Non-parametric Tests Dec 5	Review class Dec 7				