

Math 133.81 Course Syllabus – (Winter 2019)

Introduction to Probability and Statistics

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MyStatLab Website:	www.mystatlab.com courseid: main47472
Class Time/Location:	Tuesday & Thursday 4-5:50 pm, room 13
Office Hours:	

Required Materials:

- **MAT 133 Course Pack *Fall 2018 - Spring 2019* & LARGE 3-ring binder**
- **MyStatLab (“MSL”) Student Access Code**
- **TI-84 Calculator** (Note: TI-83s cannot run the newest operating system, which puts students using them at a *significant* disadvantage.)

Please note:

- ✓ Access to an Internet-connected computer and Microsoft Excel is required for Math 133. Excel-based projects will be assigned and regular class homework must be completed on a computer with Internet access—whether on campus, at home, or elsewhere.
- ✓ Students have **free access to Microsoft Office** (see <http://bit.ly/freemso> for more details).
- ✓ **Optional Textbook:** *Statistics: Informed Decisions Using Data 5th edition*, Author: Michael Sullivan, III, Publisher: Prentice Hall – **Textbook Zero:** This textbook is available online within MyStatLab and does not need to be purchased separately.
- ✓ In order to access the content on “**MyStatLab**,” you will need the handout given to you by your instructor – follow these instructions *as soon as possible* to get started!

Strongly Suggested Materials: multi-colored highlighters, pencils, eraser, ruler, sticky notes

Course Description: This course is an introduction to experimental design, data representation, basic descriptive statistics, probability theorems, frequency distributions and functions, binomial and normal probability distributions and functions, probability density functions, hypothesis testing, statistical inference, chi-square analysis, linear regression, correlation and application of the above in making informed, data-driven decisions in real-world contexts. Both graphing calculators and computer-based statistical software (Microsoft® Excel) will be used. If the prerequisite is more than two years old the recommendation is the course placement assessment be taken or the prerequisite be retaken to ensure the success of the student.

Prerequisite: A 2.0 in MAT 033, 131 or higher, or course placement by exam. (Note: Math 039 is NOT an acceptable prerequisite for Math 133)

Math 133 Core Course Objectives: Students will be able to:

- Perform a hypothesis test involving means and proportions.
- Create, interpret, and apply graphical displays of data (histograms, bar charts, circle graphs, dot plots, and stem and leaf displays)
- Compute, interpret, and apply descriptive numerical measures (mean, mode, median, range, variance, and standard deviation)
- Compute and apply a linear regression line and Pearson product moment correlation coefficient.
- Compute, interpret, and apply probabilities involving discrete, binomial, normal, and t -distributions.
- Compute and apply confidence intervals for means and proportions.
- Use appropriate technology (such as a graphing calculator) to enhance the understanding of previous objectives.
- Knowledge and awareness of statistics in scientific issues and current events

Math 133 General Education Outcomes: The course goals and objectives incorporate specific General Education Outcomes (GEOs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges and universities and reflect input from the professional communities we serve. GEOs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in many certification programs. The GEOs and course objective addressed in this class is **GEO 3** – Demonstrate Computational Skills and Mathematical Reasoning.

Important Dates: Be sure to check out the JC Academic Calendar for Convocation Day, Holidays with no classes, last day to withdraw, etc. at <https://www.jccmi.edu/academics/academic-calendar/>

Extra Credit Policy: There will be no opportunities for extra credit. Your grade is based on your performance in class, not on extras.

Absence Policy: Students are expected to attend all class meetings, arriving on time, and staying until the end. We do a variety of in-class activities involving other students and group participation and therefore cannot be made up outside of class for any reason. If absence is unavoidable the **student is responsible** for obtaining missed lecture notes by watching the online YouTube lecture videos (linked to in MyStatLab) and any missing worksheets or assignments. Please remember that office hours are not a replacement for class time.

Incompletes Policy: (Excerpt from JC Policy) "A student may request an incomplete from the instructor. The incomplete will be granted only if the student can provide documentation that his or her work up to that point is sufficient in quality, but lacking in quantity, due to circumstances beyond the student's control. Furthermore, a written plan for making up the missing work within one semester must be completed by the student. Final determination of whether an incomplete will be given is the instructor's decision." The policy can be seen here: <https://www.jccmi.edu/policies/>

Note: Requesting an "Incomplete" grade is not a valid strategy for avoiding failure

Course Requirements:

Grading Information: A 2.0 or "C" is a passing grade. Only courses with passing grades count toward graduation. Other colleges transfer in only courses with passing grades. Many financial aid sources, including most employers, require passing grades. Additionally, earning less than a 2.0 in a class results in being unable to participate in the next level of courses in a discipline which requires this course as a pre-requisite. Registering for the next course sequence without passing the pre-requisite course may result in you being dropped from that class.

<u>Grading Scale:</u>		<u>Grading Policy:</u>
90 - 100%	4.0	
85 - 89%	3.5	In-Class Work, Quizzes, etc.: 10%
80 - 84%	3.0	Online MyStatLab Homework: 15%
75 - 79%	2.5	Exam 1 (Ch. 1-4): 15%
70 - 74%	2.0	Exam 2 (Ch. 5-7): 15%
65 - 69%	1.5	Exam 3 (Ch. 8-10): 15%
60 - 64%	1.0	Projects: 10% (5% each)
50 - 59%	0.5	Cumulative Final (Ch. 1-12): 20%
0-49%	0.0	

In-Class Work, Quizzes, etc.: There will be frequent in-class assignments (turned in for credit). These may be individual or group assignments, closed or open notes at the instructor's discretion. There may also be additional quizzes posted on MyStatLab for students to take outside of class. Students that are absent may not make up the missed in-class assignments for any reason.

Online MyStatLab Homework:

- There is a homework assignment for each section in the course, which must be completed outside of class time on a computer with internet access at MyStatLab (<http://www.mystatlab.com>).
- There may also be video lectures assigned and the notes collected in class for some sections of the course.
- Late online homework assignments are penalized 10% for any problems submitted after the due date.
- There are videos available on <http://www.youtube.com/user/tuckeyalanaj> to help you with completing homework assignments, using the help features, and more.

Projects: There are two mandatory projects in the course that are designed to improve students' statistical and technological skills and connect course concepts with applications. These are done entirely outside of class and will require the use of a computer, the internet, YouTube, and Excel. You can use school computers to complete the project, if necessary.

Exams: Due to the nature of the course, every exam will have questions that relate to previous exams. The final exam is cumulative for the whole course. Exams **may not be made up** except under extreme, well-documented circumstances. Final decisions as to whether a make-up exam will be allowed rest solely with the instructor, so contact them immediately with any problem. You will be allowed the use of one page (8.5" x 11", front and back) of notes of your own creation (*excluding copies of pages from the course notes*) for each exam. For the final exam, students will be allowed four pages of notes of their own creation. The Final Exam takes place during the last week of the course and CANNOT be taken early.

Note: Due to the condensed nature of our section, it **will be necessary for exams, aside from the final exam, to be taken outside of class in the Testing Lab – 121 Bert Walker Hall.** More info here: <https://www.iccm.edu/testing-lab/>

Attendance Policy: In compliance with Federal Title IV funding requirements, as well as college initiatives, reporting of student participation in classes will occur at three designated times each semester. Instructors will assign one of three non-transcribed letter symbols to each student during each reporting period. Students identified as no longer participating will be dropped or administratively withdrawn from the class, and students identified as needing academic assistance will be contacted.

Participation/Progress Symbols:

H – The student is not doing acceptable work and needs **Help** to be successful

Q – The student has not participated and the instructor believes they have unofficially withdrawn (**Quit**).
These students will be dropped/withdrawn from the class.

V – The instructor **Verifies** that the student is participating and doing acceptable work.

Academic Honesty Policy: You are *encouraged* to talk to each other, but all your work must be your own. In other words, "group-work" is a great way to learn material, but anything you submit for a grade must be done by you - reflecting your own thought processes, not that of someone else. If I suspect you of academic dishonesty, I will follow JC's Academic Honesty Policy and take appropriate action up to and including assigning a **failing grade** for the paper, report, exam, or the course itself (whichever I deem necessary). The policy can be seen here: <https://www.jccmi.edu/policies/>

Plagiarism is defined as the failure to give credit for the use of material from outside sources. Plagiarisms includes (but is not limited to): submitting other's work as your own or submitting your work for others; using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation; reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism).

Cheating is defined as obtaining answers/material from an outside source without authorization. Cheating includes (but is not limited to): plagiarizing in any form, using notes/books/electronic material without authorization, copying, altering graded work, falsifying data, exhibiting other behaviors generally considered unethical, allowing your work to be submitted by others.

Classroom Behavior Policy: "We know what a person thinks not when he tells us what he thinks, but by his actions." - Issac B. Singer

1. Be Responsible: for your work, for your learning, for your behavior in class, etc.

The online homework and take-home quizzes in particular are going to require great levels responsibility on your part. You will need to stay on top of your schedule and your life to make sure that all coursework is done in a timely fashion.

2. Be Respectful: of other students, of the instructor, of the material, of yourself...

Turn OFF your cell phones, no chewing tobacco, come on time, stay the full time, be prepared to answer questions and work together.

Where to Get Help...

Office Hours: Office hours are there for you to come get help. Please come and see me if you need questions answered. Remember, though, that office hours are not a replacement for attending class.

Center for Student Success: The Center for Student Success has tutoring available for free to students enrolled in Math 133. Math tutors are always on staff when the Center is open, you can drop in anytime. You can get help with take-home work, MyMathLab/MyStatLab homework, and more. The Center is located in 138 Bert Walker Hall (on Central Campus). For tutoring at the other campus locations please speak to the staff member at the front desk for availability. Central Campus CSS hours: <http://bit.ly/jctutoringhours>.

It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. Accommodations do not automatically carry over to the next semester.

<https://www.jccmi.edu/center-for-student-success/accommodations-for-students-with-disabilities/>

Supplemental Instruction: Some sections of the course have Supplemental Instruction (SI) Leaders assigned to them. These students will serve as peer “math coaches” for the students in that section, and will facilitate weekly study sessions. These study sessions are open to *all* MAT 133 students and are completely voluntary, but highly recommended. **In a recent semester, students that utilized SI study sessions experienced an increase of over 17% in their pass rates, compared to those who did not.** Even if your class doesn’t have an SI Leader, you are encouraged to attend SI Sessions for your course. For times and locations of SI sessions, visit the Center for Student Success webpage and click on “Supplemental Instruction” in the menu or go to (<http://bit.ly/jcsischedule>)

YouTube Videos: Lead Faculty Alana Tuckey has created hundreds of videos showing for this course including lectures, calculator tutorials, and more. Go to: <http://www.youtube.com/user/tuckeyalanaj> and check out any 133 playlists.

MyStatLab: There are videos, extra problems, sample exams, lecture notes, PowerPoint lectures and more available in MyStatLab. It’s a great resource! In particular, the **Study Plan** in MyStatLab can help with studying for exams as it gives you unlimited extra problems to do for practice.

Each Other: Get a regular study group. Write down names and numbers of your peers and call on each other when needed!

Name:	Contact Info:	Availability:

Math 133 – Tentative 15-Week Schedule			
Day	Date	Material Covered	Topics
1	9/5	1.1, 3.1	Introduction to Statistics; Measures of Center
2	9/10	3.2	Measures of Spread
3	9/12	3.3	Weighted Mean; Measures of Position
4	9/17	3.4-3.5	Measures of Position; Boxplots
5	9/19	1.2, 4.1	Correlation
6	6/24	4.2, 4.3	Linear Regression, Residual Plots
7	9/26		
8	10/1	Review for Exam 1	
9	10/3	5.1	Basics of Probability
10	10/8	5.2	Addition Rule
11	10/10	5.3	Multiplication Rule
12	10/15	6.1, Start 6.2	Discrete Probability Distributions
13	10/17	Finish 6.2, 7.1	Binomial Distribution; Normal Distributions
14	10/22	7.2	Normal Distributions;
15	10/24	7.3	Normal Probability Plot
16	10/29	Review for Exam 2	
17	10/31	1.3, 1.4, 1.5, 8.1	Bias in Sampling; Sampling Distribution of Sample Means
18	11/5	8.2, Start 9.1	Sampling Distribution of Sample Proportions; Confidence Intervals for Proportions
19	11/7	Finish 9.1	Confidence Intervals for Proportions
20	11/12	9.2	Confidence Intervals for Means
21	11/14	9.4, 9.5	More with Confidence Intervals; Confidence Interval Review
22	11/19	10.1	Basics of Hypothesis Testing
23	11/26	10.2	Hypothesis testing with Proportions
24	11/28	10.3	Hypothesis testing with Means
25	12/3	10.5 & Review for Exam 3	Review of Chapter 10
26	12/5	1.6, 11.1	Hypothesis testing for Difference of Proportions
27	12/10	11.2	Hypothesis testing for Difference of Means - Dependent Samples
28	12/12	11.3 & 11.5	Hypothesis testing for Difference of Means - Independent Samples & Review of Chapter 11
29	12/17	Review for Final Exam	
30	12/19	Final Exam	

NOTE!! This schedule is subject to change as the course progresses. To know exactly what was covered, you must attend class!