

Math 133.PL1 Course Syllabus – (Winter/2019)

Introduction to Probability and Statistics

Instructor:	Vincent Maltese
Class Meeting Days:	Tuesday/Thursday
Class Times:	12:30 PM to 3:30 PM
Location:	TBD
Office Hours:	Wednesday, 12:00-3:30 PM and by appointment.
Required Materials:	MAT 133 Course Pack <i>Fall 2018 - Spring 2019</i>
	TI-84 Calculator (Note: Calculators will be available for use in class and to be checked out in the evenings.)

Please note:

- ✓ **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.

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: The course will meet on Wednesdays and Fridays except as noted on the tentative schedule.

DATE	EVENT
JAN. 14, 2019	DAY AND EVENING CLASSES BEGIN
JAN. 14 – MAY. 5, 2019	SEMESTER DATES
FEB. 1, 2019	ALL EMPLOYEE CONVOCATION. NO CLASSES
MARCH. 11 – 17, 2019	MID-SEMESTER BREAK. NO CLASSES
MAY 4, 2019	COMMENCEMENT
MAY 5, 2019	END OF WINTER SEMESTER
MAY 7, 2019	GRADES DUE

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 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.iccm.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.

In-Class Work, Quizzes, etc.: There may be in-class assignments (turned in for credit). These may be individual or group assignments, closed or open notes at the instructor's discretion. Students that are absent may not make up the missed in-class assignments for any reason.

<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	Homework: 10%
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. 1-11): 25%
0-49%	0.0	

Homework:

- There is a homework assignment for each section in the course, which must be completed outside of class time.
- Late homework assignments are penalized 10% for any work submitted after the due date.

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.

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.

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.
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...
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.

Each Other: Get a regular study group. Work with your peers and call on each other when needed!

Math 133 – Tentative 15-Week Schedule		
Date	Material Covered	Topics
1/15/19	1.1, 3.1	Introduction to Statistics; Measures of Center
1/17/19	1.3, 1.4, 3.2	Measures of Spread
1/22/19	3.3, 3.4	Weighted Mean; Measures of Position
1/24/19	1.2, 3.5, 4.1	Boxplots; Correlation
1/29/19	4.2, 4.3	Linear Regression, Residual Plots
1/31/19	Review for Exam 1	
2/5/19	Exam 1	
2/7/19	5.1, 5.2	Basics of Probability; Addition Rule
2/12/19	5.2, 5.3	Addition Rule; Multiplication Rule
2/14/19	4.4, 5.4	Contingency Tables; Conditional Probability
2/19/19	6.1-6.2	Discrete Probability Distributions; Binomial Distribution
2/21/19	6.2, 7.1	Binomial Distribution; Normal Distribution
2/26/19	7.2, 7.3	Normal Distributions; Normal Probability Plot
2/28/19	Review for Exam 2	
3/5/19	Exam 2	
3/19/19	1.5, 8.1, 8.2	Bias in Sampling; Distribution of Sample Means and Sample Proportions
3/21/19	9.1, 9.2	Confidence Intervals for Proportions and Means
3/26/19	9.4, 9.5	More with Confidence Intervals; Confidence Interval Review
3/28/19	10.1	Basics of Hypothesis Testing
4/2/19	10.2	Hypothesis testing with Proportions
4/4/19	10.3, 10.5	Hypothesis testing with Means, Review of Hypothesis Tests
4/9/19	Review for Exam 3	
4/11/19	Exam 3	
4/16/19	11.1	Hypothesis testing for Difference of Proportions
4/18/19	11.2	Hypothesis testing for Difference of Means - Dependent Samples
4/23/19	11.3	Hypothesis testing for Difference of Means - Independent Samples
4/25/19	11.5	Review of Chapter 11
4/30/19	Review for Final Exam	
5/2/19	Final Exam	

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