Math 133.PC1 Course Syllabus – Spring 2018

Instructor:	Terry L. Cox
Class Time/Location:	MDOC-Scott Bldg. 300; 5:50-8:14 p.m.

Required Materials:

- **MAT 133 Course Pack *Fall 2017 - Spring 2018*** & LARGE **3-ring binder**
- **Textbook :** *Statistics: Informed Decisions Using Data 5th edition*, Author: Michael Sullivan, III, Publisher: Prentice Hall
- **TI-84 Calculator** (Note: TI-83s cannot run the newest operating system, which puts students using them at a *significant* disadvantage.)

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*:** 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.

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.

Grading Scale:		Grading Policy:
90 -100%	**4.0**	
85 - 89%	**3.5**	**Quizzes:** 10%
80 - 84%	**3.0**	**Worksheet Homework:** 10%
75 - 79%	**2.5**	**Exam 1 (Ch. 1-4):** 10%
70 - 74%	**2.0**	**Exam 2 (Ch. 5-7):** 10%
65 - 69%	**1.5**	**Exam 3 (Ch. 8-10):** 10%
60 - 64%	**1.0**	**Projects:** 10% (5% each)
50 - 59%	**0.5**	**Cumulative Final (Ch. 1-11):** 25%
0-49%	**0.0**	**Practice Exams: 15% (5% each)**

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. Students that are absent may not make up the missed in-class assignments for any reason.

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 graphing calculator.

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 me 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.

Intermediate Grading: To comply with college policy and federal regulations you will receive three intermediate grades during the semester. The grades assigned are letters with the following meanings:

- **V:** Verifies that you are participating, and your work so far has been acceptable
- **H:** Means that you are participating, but your work shows that you may require Help to complete the class successfully.
- **Q:** Means that you have quit participating in the course. If you receive a Q grade, you will automatically be withdrawn from the course. A Q grade is normally assigned if you have not submitted work (classwork, exams, participation, etc.) for two weeks and have not contacted your instructor regarding your absences.

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/

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 homework, quizzes and practice-exams are going to require great levels of responsibility on your part. You will need o be organized and disciplined 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...

Be prepared to answer questions, to work together and discuss topics.

Math 133 – Tentative 12-Week Schedule			
Day	**Date**	**Material Covered**	**Topics**
1	5/23	1.1, 3.1	Introduction to Statistics; Start Measures of Center
2	5/30	1.3, 1.4, 3.2	Simple Random Sampling; Measures of Spread
3	6/4	3.3-3.4	Weighted Mean; Measures of Position
4	6/6	3.5, 1.2, 4.1	Boxplots; Observational Study vs Experiment; Correlation
5	6/11	4.2, 4.3	Correlation; Regression; Residual Plots
6	6/13		**EXAM 1**
7	6/18	5.1-5.2	Basics of Probability; Addition Rule
8	6/20	5.3, 4.4	Multiplication Rule; Contingency Tables
9	6/25	5.4, 6.1	Conditional Probability; Discrete Probability Distribution
10	6/27	6.2, 7.1	Binomial Distribution; Normal Distribution
11	7/2	7.2, 7.3	Normal Distributions; Normal Probability Plot
12	7/9		**EXAM 2**
13	7/11	1.5, 8.1, 8.2, 9.1	Bias in Sampling; Distribution of Sample Means
14	7/16	9.2, 9.4, 9.5	Confidence Intervals of Means; More with Confidence Intervals
15	7/18	10.1	Beginnings of Hypothesis Testing;
16	7/23	10.2	Hypothesis Testing One Proportion
17	7/25	10.3, 10.5	Hypothesis testing with Means, Review of Hypothesis Tests
18	7/30		**EXAM 3**
19	8/1	1.6, 11.1	Hypothesis testing for Difference of Proportions
20	8/6	11.2	Hypothesis testing for Difference of Means - Dependent Samples
21	8/8	11.3, 11.5	Hypothesis testing for Difference of Means - Independent Samples
22	8/13		**FINAL, Part 1**
23	8/15		**FINAL, Part 2**

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