Math 133.51 (PSY 144, CIS 203) Course Syllabus

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MyMathLab Website:	www.mymathlab.com
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Class Time/Location:	9-11:25 am T, Th / Room 109 JW

Required Materials: Coursepack, MyMathLab Student Access, LARGE 3-ring binder, LARGE eraser, pencils, TI-84 Calculator **strongly recommended** (Note: TI-83's cannot run the newest operating system, which puts students using them at a disadvantage)

Optional Materials: Textbook (*Statistics: Informed Decisions Using Data 4th edition*, Author: Michael Sullivan, III, Publisher: Prentice Hall – this text is available for rent in the JCC bookstore)

Please note: **Access to a computer with Internet is <u>required</u> for this section of Math 133.** We will be doing homework, projects, and possibly some quizzes online, outside of class. School computers can be used to satisfy these requirements.

Course Description: Emphasizes basic descriptive statistics, probability theorems, frequency distributions and functions, binomial and normal probability distributions and functions, probability density functions, hypothesis testing, statistical inferences, CHI-square analysis, linear regression and correlation

Prerequisite: A 2.0 in MTH 033, 131 or higher, or course placement by exam. (Note: Math 031 is NOT an acceptable prerequisite for Math 133)

Math 133 Corse 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 and rank 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 Associate Degree Outcomes: All courses at Jackson Community College address one or more of the institutionally defined Associate Degree Outcomes (ADOs). Math 133 contributes to the following outcomes.

ADO 3: Proficient - **Demonstrate computational skills and mathematical reasoning**
- Demonstrate an understanding of descriptive statistics (mean, mode, median, quartiles, range, variance, standard deviation, IQR).
- Demonstrate an understanding of probabilities – discrete, binomial, normal, Student's- T, classical, and empirical.
- Demonstrates an understanding of confidence intervals.
- Demonstrate an understanding of statistical displays (histograms, bar charts, pie charts, boxplots, stem-and-leaf plots)
- Demonstrates an understanding of the language of statistics in real-life contexts – Type I or II errors, confidence intervals, transforming claims into statistical hypotheses.
- Demonstrate an understanding of the Least Squares Linear Regression line and Pearson Product Moment Correlation coefficient.
- Demonstrate an understanding of statistically testing hypotheses.
- Acquires and applies a broad range of statistical skills and concepts as well as technology to facilitate efforts to visualize, interpret, and solve statistical problems.
- Uses graphic calculator and/or computer statistical systems to support mathematical reasoning and problem solving.
- Understands the role of statistics in interpreting the world – bias, misleading graphs, correlation/causation, statistical error, central limit theorem.

ADO 7 – Proficient - Critical Thinking
- Demonstrates an understanding of bias, correlation/causation, evidence supporting arguments.
- Understands multiple factors affecting assumptions and conclusions in hypothesis testing Articulates and defends conclusions in hypothesis testing.
- Uses expanded vocabulary in hypothesis testing.

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	**Online Homework:** 10%
80 - 84%	3.0	**In-Class Work, Quizzes, etc.:** 10%
75 - 79%	2.5	**Exam 1 (ch 1-4):** 15%
70 - 74%	2.0	**Exam 2 (ch 5-8):** 15%
65 - 69%	1.5	**Exam 3 (ch 9-11):** 15%
60 - 64%	1.0	**Projects:** 10%
50 - 59%	0.5	**Cumulative Final (ch 1-13):** 25%
0-49%	0.0	

Online Homework:
- These assignments must be done outside of class time on a computer with internet access at MyMathLab (reachable through http://www.mymathlab.com).
- There is a homework assignment for each section in the course.
- Homework will be due every week, as announced in class, usually every Monday. You can also check MyMathLab for particular due dates.
- You have an unlimited number of tries to do the homework before you submit it (up until the due date). Thus, all of your homework should receive full credit, if you keep trying until you get a perfect score.
- There are videos available on http://www.youtube.com/user/tuckeyalanaj to help you navigate completing homework assignments, using the help features, and more.

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 MyMathLab for students to take outside of class. 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. 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 if there is a problem. You will be allowed a page (8.5 by 11, front and back) of notes for each exam of your own creation. All previous note sheets may be used on the final exam. There will also be instructor-given tables and info sheets on certain exams.

> **Note:** Due to the condensed nature of our section, it may be necessary for some exams to be taken in the testing center in Atkinson Hall, room 119.
> More info here: http://www.jccmi.edu/library/testinglab.htm

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 the missed lecture notes from another student (or by watching the online YouTube lecture videos). Please remember that office hours are not a replacement for class time.

Important Dates: Be sure to check out the JCC Academic Calendar for Project Success Day, Holidays with no classes, last day to withdraw, etc. at http://www.jccmi.edu/academics/academic_calendar.htm

**Incompletes Policy:** (Excerpt from JCC 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."

**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 in order to complete the class successfully. If you receive an H grade, you will be contacted by the Center for Student Success (located in 125 Bert Walker Hall) and offered tutoring services.
- **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 JCC's Academic Honesty Policy and take appropriate action up to and including assigning a **failing grade** for the paper, project, report, exam, or the course itself (whichever I deem necessary). The policy can be seen here:
http://www.jccmi.edu/policies/Academics/Policies/1004.pdf

**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. You can get help with take-home work, MyMathLab homework, and more. The Center is located in Bert Walker Hall Room 125.

Math Help Room: This room is located in 245 McDivitt Hall. It is coordinated with the Center for Student Success – check the schedule on the door for hours.

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

MyMathLab: There are videos, extra problems, sample exams, lecture notes, PowerPoint lectures and more available in MyMathLab. It's a great resource!

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

Day	Date	Material Covered	Topics
		Math 133 – Tentative 12-Week Schedule	
		2.5 hours, twice a week	
1	9/17	1.1, 3.1	Introduction to Statistics; Start Measures of Center
2	9/19	1.3, 3.2	Simple Random Sampling; Measures of Spread
3	9/26	3.3-3.5	Weighted Mean; Measures of Position; Boxplots
4	10/1	1.2, 4.1-4.2	Observational Study v Experiment; Correlation; Regression
5	10/3	4.3; **Review for Exam 1**	Residual Plots; **Review**
6	10/8	**Exam 1 (Ch 1-4)**	
7	10/10	5.1-5.2	Basics of Probability; Addition Rule
8	10/15	5.3, 6.1	Multiplication Rule; Discrete Probability Distribution
9	10/17	6.2, 7.1	Binomial Distribution; Normal Distribution
10	10/22	7.2-7.3	Normal Distributions; Normal Probability Plot
11	10/24	1.5, 8.1-8.2	Bias in Sampling; Distribution of Sample Means
12	10/29	8.2, **Review for Exam 2**	Distribution of Sample Proportion; **Review**
13	10/31	**Exam 2 (Ch 5-8)**	
14	11/5	9.1-9.2	Confidence Intervals of Proportions and Means
15	11/7	9.3-9.4	Other Confidence Intervals
16	11/12	10.1-10.2	Beginnings of Hypothesis Testing; Hypothesis Testing One Proportion
17	11/14	10.3-10.5	Hypothesis Testing of Mean, Standard Deviation
18	11/16	1.6, 11.2-11.3	Design of Experiments; Two Population Hypothesis Testing
19	11/21	11.1, 11.5	Hypothesis Testing 2-Proportions; Review of 2-Sample Testing
20	11/26	**Review for Exam 3**	**Review**
21	12/3	**Exam 3 (Ch 9-11)**	
22	12/5	12.1, 4.4, 12.2	Contingency Tables; Chi-Square Tests
23	12/10	13.1, **Review for Final Exam**	One-way ANOVA; **Review**
24	12/12	**Final Exam**	

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