

Math 133 (PSY 144, CIS 203) Course Syllabus – Winter 2016

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MyStatLab Course ID: www.mystatlab.com Course ID: _____

Office Hours: <http://bit.ly/sftschedule>

**Supplemental Instruction
Leader:**

Required Materials: Coursepack (JC Bookstore only), MyStatLab (MSL) Student Access, LARGE 3-ring binder, LARGE eraser, pencils, TI-84 Calculator **required** (Note: TI-83's cannot run the newest operating system, which puts students using them at a *severe disadvantage*)

NOTE: Access to a computer with Internet is required for this course. We will be doing notes, homework, projects, and possibly some quizzes online, outside of class. Campus computers can be used to satisfy these requirements.

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 JC bookstore)

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

Math 133 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:

<u>Grading Scale:</u>	
90 -100%	4.0
85 - 89%	3.5
80 - 84%	3.0
75 - 79%	2.5
70 - 75%	2.0
65 - 69%	1.5
60 - 64%	1.0
50 - 59%	0.5
0-49%	0.0

Overall Course Grade Weighting:

- Online MSL Homework:** 10%
- In-Class Work:** 15%
- Exam 1 (Ch. 1-4):** 15%
- Exam 2 (Ch. 5-7):** 15%
- Exam 3 (Ch. 8-10):** 15%
- Projects:** 10% (5% each)
- Cumulative Final (Ch. 1-13):** 20%

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 prerequisite. Registering for the next course sequence without passing the prerequisite course may result in you being dropped from that class.

Online Homework:

- These assignments must be done outside of class time on a computer with internet access at MyStatLab (reachable through <http://www.mystatlab.com>).
- You can expect an online assignment for each section in the course.
- Homework will be due every week, as announced in class. All due dates will be posted via the MSL announcements.
- You have an unlimited number of tries to complete homework up until the due date, so you can receive full credit, provided you start early and remain persistent.
- 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: 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.

NOTE: If a student is absent, they are **still responsible** for completing and submitting any **coursework** they missed on time. Students must go to MyStatLab, click on "Class Worksheets", download and print off the appropriate worksheets missed, complete them, and submit them **by the start** of the class at which they are due with **no exceptions** (this may require submitting things electronically with a scan or via classmates). Assignments may NOT be turned in late *for any reason*.

Projects: There are two mandatory projects in the course. These will be completed entirely outside of class and will require the use of a computer, the internet, YouTube, and Excel. Remember: You always 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 an exam can be made up are made solely by the instructor, so contact him immediately if there is a problem. You will be allowed one page (8.5"x11", front and back) of notes of your own creation (i.e., *excludes copies of pages from the course pack*) for *each* exam. 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: The final exam takes place during the *last week* of the course and CANNOT be taken early.

NOTE: Due to the large amounts of material in our course, it will be necessary for some exams to be taken in the Testing Lab in Atkinson Hall, room 118. Be sure to look over the Testing Lab's policies and procedures here: <http://www.jccmi.edu/library/testinglab.htm>

COURSE POLICIES:

Extra Credit Policy: There will be no opportunities for *extra* credit (i.e., points above and beyond those assigned in class). 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. See the "In-Class Work" section above for dealing with missed assignments due to absences.

Important Dates: Be sure to check out the JC 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 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."

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, 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 worksheets will require responsibility and organization 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. The single most common piece of advice given by successful students in this course to those about to take it is simply: ***Keep up with your homework and don't fall behind.***

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. These are regularly classroom rules for good reason -- distractions (especially from electronic devices) damage your ability to focus, and that of the people around you. **Classrooms work best when everyone is focused and prepared.**

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.

Supplemental Instruction Sessions: Some sections of the course (*like ours*) have Supplemental Instruction (SI) Leaders assigned to them. These students serve as peer “coaches” for students in that section, and will facilitate weekly study sessions. These study sessions are open to *all* MAT 133 students and are completely voluntary. For times and locations of SI sessions, visit the Center for Student Success webpage and click on “Supplemental Instruction” in the menu (<http://www.jccmi.edu/Success>).

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, MyStatLab homework, and more. The Center is located in Bert Walker Hall Room 125.

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 the different 133 playlists.

MyStatLab: There are videos, extra problems, sample exams, lecture notes, PowerPoint lectures and more available in MyStatLab. 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! For more information on starting and maintaining a study group, check out the following link: <http://bit.ly/math-study-group>

NAME	CONTACT INFO	GENERAL AVAILABILITY

Math 133 – Tentative 15-Week Schedule

2 hours, twice a week

Material Covered	Topics
1.1, 3.1	Introduction to Statistics; Start Measures of Center
3.1, 1.3, 3.2	Finish Measures of Center; Simple Random Sampling; Start Measures of Spread
3.2-3.3	Finish Measures of Spread, Weighted Mean
3.4-3.5	Measures of Position; Boxplots
1.2, 4.1	Observational Study vs Experiment; Correlation
4.2-4.3	Linear Regression; Residual Plots
Review for Exam 1	
Exam 1 (Ch 1-4)	
5.1-5.2	Basics of Probability; Addition Rule
5.2-5.3	Multiplication Rule;
6.1, 6.2	Discrete Probability Distribution; Binomial Distribution
7.1-7.2	Normal Distributions
7.3, Review for Exam 2	Normal Probability Plot; Review for Exam 2
Exam 2 (ch 5-7)	
1.5, 8.1	Bias in Sampling; Distribution of Sample Means
8.2, 9.1	Distribution of Sample Proportion; Confidence Intervals for 1 Proportion
9.1, 9.2	Confidence Intervals for Proportions and Means
9.3-9.4	Confidence Intervals for St. Dev., Review of Conf. Int.
10.1, 10.2	Basics of Hypothesis Testing
10.2, 10.3	Hypothesis testing with Proportions and Means
10.4-10.5	Hypothesis testing with Standard Deviation; Review of 1-Sample Testing
Review for Exam 3	Review for Exam 3
Exam 3 (Ch 8-10)	
1.6, 11.2	Design of Experiments; Hypothesis Testing 2 Dependent Means;
11.3, 11.1	Hypothesis Testing 2 Independent Means; Hypothesis Testing 2-Proportions
11.5, 12.1	Review of 2-Sample Testing; Goodness-of-Fit Test
4.4, 12.2	Goodness of Fit Test; Contingency Tables;
13.1	Tests of Independence and Homogeneity; One-Way ANOVA
Review for Final Exam	Review
Final Exam	

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