

Math 133 Course Syllabus – (Fall 18)

Instructor:	Brian Gemalsky

Required Materials:

- **MAT 133 Course Pack *Fall 2017 - Spring 2018*** & Pads of Paper
- **TI-84 Calculator** (Note: TI-83s cannot run the newest operating system, which puts students using them at a *significant* disadvantage.)

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

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.

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	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. 1-12): 25%
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.

Homework:

- There is a homework assignment for each section in the course, which must be completed outside of class time from the textbook.

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.

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 Federer C – Potter Center) 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 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 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...

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>.

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		1.1, 3.1	Introduction to Statistics; Measures of Center
2		1.3, 1.4, 3.2	Measures of Spread
3		3.3-3.4	Weighted Mean; Measures of Position
4		3.4-3.5	Measures of Position; Boxplots
5		1.2, 4.1	Correlation
6		4.2, 4.3	Linear Regression, Residual Plots
7		Review for Exam 1	
8		5.1	Basics of Probability
9		5.2	Addition Rule
10		5.3	Multiplication Rule
11		4.4, 5.4	Contingency Tables; Conditional Probability
12		6.1-6.2	Discrete Probability Distributions; Start Binomial Distribution
13		6.2, 7.1	Binomial Distribution; Normal Distribution
14		7.2, 7.3	Normal Distributions; Normal Probability Plot
15		Review for Exam 2	
16		1.5, 8.1-8.2	Bias in Sampling; Distribution of Sample Means and Sample Proportions
17		9.1	Confidence Intervals for Proportions
18		9.2	Confidence Intervals for Means
19		9.4, 9.5	More with Confidence Intervals; Confidence Interval Review
20		10.1	Basics of Hypothesis Testing
21		10.2	Hypothesis testing with Proportions
22		10.3, 10.5	Hypothesis testing with Means, Review of Hypothesis Tests
23		Review for Exam 3	
24		11.1	Hypothesis testing for Difference of Proportions
25		11.2	Hypothesis testing for Difference of Means - Dependent Samples
26		11.3, 11.5	Hypothesis testing for Difference of Means - Independent Samples
27		12.1	Hypothesis testing for Goodness of Fit
28		12.2	Hypothesis testing for Independence
29		Review for Final Exam	
30		Final Exam	

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