

MAT 033 – Algebra for Statistics

Course Syllabus Fall 2020

Number of Credits: 4

Meeting Times: Videos will be watched at times designated by your location

Location: Correctional Facility

Instructor: Lisa Fellows

Required Materials:

MAT 033 Course Pack Fall 2020 - Spring 2021

TI-84 Calculator

- ✓ There is no “textbook” for this course, aside from the course pack. However, the probability and statistics portions of the course are based on Sullivan’s 5th Edition of *Statistics: Informed Decisions Using Data*. As this is the text for the required follow-up course (MAT 133), access to this textbook will be very helpful in MAT 033 and beyond.

Strongly Suggested Materials: multi-colored highlighters, pencils, eraser, ruler, sticky notes

Course Description: As an alternative pathway to college-level mathematics, this course introduces fundamental algebraic concepts within an underlying framework of statistics and mathematical modeling based on real-world data. Major concepts and themes include: problem solving and experimental design; unit analysis and error in measurement; dimensional analysis and scientific notation; representing data and coordinate graphing; introduction to basic descriptive statistics and probability theorems; basic geometric principles (area, volume, perimeter); arithmetic operations on numbers, ratios, summations, and percents; solution of formulas; modeling relationships (linear regression); solving equations and inequalities; and function arithmetic and graphing. Appropriate technology includes a graphing calculator.

Prerequisite: Course placement by exam.

Core Course Objectives: Students successfully completing MAT 033 will be able to...

1. Create, interpret, and apply graphical displays of data (histograms, bar & pie charts, dot plots, and stem & leaf displays).
2. Compute, interpret, and apply descriptive measures (mean, mode, median, range, variance, and standard deviation).
3. Use algebraic processes to manipulate formulas, simplify basic algebraic expressions and solve linear equations and inequalities.
4. Demonstrate understanding of functions, independent and dependent variables, number theory, sets, and mathematical notation.
5. Demonstrate understanding of concepts of equations by finding and interpreting appropriate graphs, x - and y -intercepts, and specific function characteristics.
6. Generate and interpret regression models to fit data.
7. Make, interpret, and compute with measurements in scientific notation.
8. Use appropriate technology (i.e., graphing calculator) to enhance understanding of objectives.
9. Demonstrate knowledge and awareness of statistics in scientific arguments and current events.

Course Requirements:

Homework and Discussion Questions: There will be numerous homework assignments that will need to be completed and turned in for credit. Due dates for assignments will be communicated with you through the JPAY system. Discussion questions will be sent weekly through JPAY and responses will be graded as well as used for attendance. Discussion questions will cover big concepts of 033 and understanding of those topics is important for your success in the course.

Projects: There will be two *required* projects for this course that expand on concepts covered and require students to use real-world data and tools. One will involve unit analysis and real-world applications. Another will involve collecting and analyzing qualitative data. These projects are required of all students taking the course.

Exams: Each of the examinations may have cumulative review questions. The final exam is cumulative for the entire course. Students may create a 1-page (both sides) note sheet for use on each exam, and all previous exam note sheets may be used on the final exam.

NOTE: Exams that are submitted without the honesty statement signed will NOT be graded

Course Policies:

Absence Policy: . Students are required to reply to an instructor initiated JPAY every week by Thursday of that week in order to be counted as present in the class. Students are expected to submit all work to be picked up at times decided by Jackson College and your location. If you are unable to return the required assignments it is your responsibility to email your instructor through the JPAY system.

Extra Credit: Math Department policy is that no “extra credit” be part of any MAT course at JC. There will be no opportunities for any *extra* credit beyond the scope of the above 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 this class will result in you being unable to participate in the next course in the sequence (MAT 133). This will prevent access to any further programs of study and completion of any associate’s degree.

Grading Scale:

90 – 100%	4.0
85 – 89%	3.5
80 – 84%	3.0
75 – 79%	2.5
70 – 74%	2.0
65 – 69%	1.5
60 – 64%	1.0
55 – 59%	0.5
0 – 54%	0.0

Grading Weights:

Homework and Discussions: 10%
Exam 1 (<i>Unit 1</i>): 10%
Exam 2 (<i>Units 2-3</i>): 10%
Exam 3 (<i>Units 4-5</i>): 10%
All Projects: 10%
Cumulative Final Exam (<i>Units 1-7</i>): 50%

Incomplete Policy: (Excerpt from JC Policy) “Students may receive an “I” if, at least 90 percent (or as otherwise designated within the course syllabus), of the coursework is completed with an average grade of 2.0 to meet the objectives as specified in the course syllabus. ... The grade of “I” is not awarded to students who did not attend, or seldom attended, or to those who simply are not pleased with their final grades.” <https://www.jccmi.edu/wp-content/uploads/2015/11/1003.pdf>

Academic Honesty Policy: You are *encouraged* to talk to each other, but all your submitted work must demonstrate your own understanding. 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 those of anyone 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 assignment, quiz, project, report, exam, or the course itself (whichever I deem necessary). The policy can be seen here: <https://www.jccmi.edu/wp-content/uploads/1004.pdf>

Classroom Behavior Policy: *The following are expectations that we can all share.*

We are each responsible for our work, our learning, and the consistency of our performances.

The regular in-class collaborations and examinations will require consistent effort on your part. Generally speaking, mathematics is much like a foreign language – it requires regular effort and consistent practice to understand and master.

We are each respectful of everyone in the class (including ourselves).

Come prepared (and on time) to work together and ask/answer questions.

We will communicate with each other promptly regarding problems or concerns.

Regular, direct communication solves many more problems than it causes. Please do not hesitate to contact me for any reason, and I will do the same with you.

Getting Help:

Your fellow classmates are perhaps the single best resource you have. Get to know and rely on each other! **Starting a study group** is probably the **best way** to maintain strong study habits and improve your learning.

Notice about Dates:

Due to circumstances beyond anyone's control, due dates are subject to change. If a video for a topic is unavailable for viewing before the assignment for that topic is due, you do not have to submit that assignment. Send a JPay letting me know about the issue and submit the assignment at the next work pick up. I will communicate with you about any date changes.

Important Dates:

JUNE 1	CLASSES BEGIN
JUNE 11	1 ST JC PICKUP
JUNE 25	2 ND JC PICKUP -
JULY 9	3 RD JC PICKUP
JULY 23	4 TH JC PICKUP
AUGUST 6	5 TH JC PICKUP –
AUGUST 20	LAST JC PICKUP – FINAL EXAM & PROJECT

MAT 033 – Flow of course

Topic / Activity
Unit 1: Numbers, Operations, Formulas & Units
Project 1 – Can start after watching video on Topic 16
Exam 1 (Math Unit 1)
Unit 2: Statistical Data Collection
Fractions and Probability
Exam 2 (Math Units 2 & 3)
Unit 4: Exact Linear Relationships
Unit 5: Correlation and Approximate Linear Models
Exam 3 (Math Units 4 & 5)
Unit 6: Tabular and Graphical Displays
Project 2 – Can start during Unit 6
Unit 7: Summarizing Data Numerically
FINAL EXAM