



MAT-040-71 (077814) Quant Reasoning Fundamentals Syllabus

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Office Hours:	By appointment

Course Information	
Connect Math Website:	https://www.connectmath.com
Connect Math Course ID:	KALRF-A9M6F
Class Time/Location:	Monday-Thursday

Required Materials:

- No required text (textbook zero)
- Workbook (paid through tuition and fees)
- LARGE 3-ring binder for this class ONLY!
- Extra lined paper for in-class note taking & preview note taking
- Writing materials - LARGE eraser, pencils, highlighters, etc.
- A scientific calculator is required for this course. A graphing calculator (TI-84 preferred) will be a requirement for MAT 130.
- **Please note: Access to a computer with Internet is required for this section of Math 040.** We will be doing homework, projects, and possibly some quizzes online, outside of class. School computers can be used to satisfy these requirements.

Prerequisite: none

Co-requisite: Must be concurrently enrolled in MAT130

Course Description: This course is designed to prepare non-STEM major students for MAT 130, Quantitative Reasoning. Cultivates student skills in interpreting, understanding, and using quantitative information. Develops facility with numeracy, problem solving strategies, proportional and statistical reasoning through a quantitative literacy lens. Fosters skills in reading and writing quantitative information. Emphasizes critical thinking and the use of multiple strategies in applied contexts. It is a just-in-time approach to supporting the student, who is also enrolled in MAT 130.

Math 040 Course Objectives: Upon completion of this course students will be able to:

1. **Communication Objective:** Students will be able to interpret and communicate quantitative information and mathematical and statistical concepts using language appropriate to the context and intended audience.
 - Use appropriate mathematical language.
 - Read and interpret short, authentic texts of quantitative information including graphical displays.
 - Use quantitative information to make or critique an argument or to summarize information.

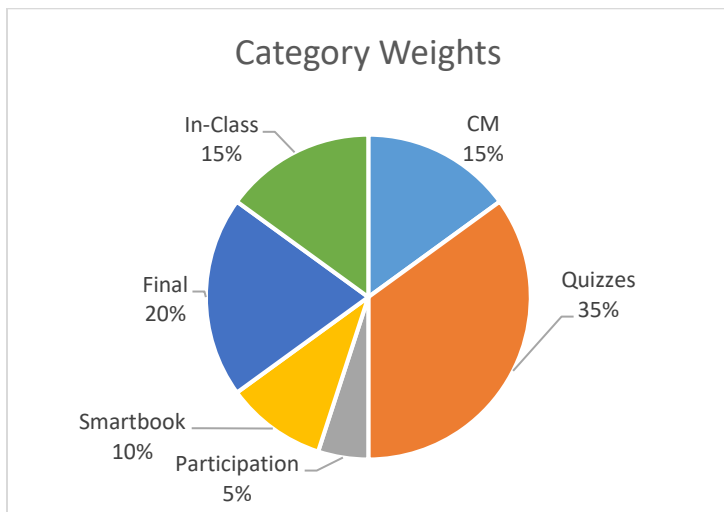
2. **Problem Solving Objective:** Students will be able to make sense of problems, develop strategies to find solutions, and persevere in solving them.
 - Solve multi-step problems by applying strategies in new contexts or by extending strategies to related problems within a context.
3. **Reasoning & Evaluation Objective:** Students will be able to reason, model, evaluate, and make decisions with mathematical, statistical, and quantitative information.
 - Make decisions about situations in which quantitative information must be considered along with other factors.
 - Present short written or verbal justifications of decisions that include appropriate discussion of the mathematics involved.
 - Identify mathematical or statistical errors, inconsistencies, or missing information in arguments.
4. **Technology Objective:** Students will be able to use appropriate technology in a given context.
 - Use a spreadsheet to organize quantitative information and make repeated calculations using simple formulas.
 - Use internet- or calculator- based tools appropriate for a given context.
5. **Learning Strategies Objective:** Students will improve metacognition and self-regulation.
 - Take responsibility for their own mathematical development.
 - Utilize self-management practices as it pertains to their mathematics class such as time management, meeting deadlines, attending class, etc.
 - Work interdependently with peers, the instructor and other college support systems.
6. **Numeracy Objective:** Students will develop number sense and the ability to apply concepts of numeracy to investigate and describe quantitative relationships and solve real world problems in a variety of contexts.
 - Solve problems and interpret results involving: fractions, decimals, percents, unit analysis, estimation, magnitude, measurement, and inequalities.
 - Demonstrate operation sense and communicate verbally and symbolically with real numbers.
 - Read, interpret, and make decisions about data summarized numerically, in tables, and in graphical displays.
7. **Proportional Reasoning Objective:** Students will use proportional reasoning to solve problems that require ratios, rates, proportions, and scaling.
 - Represent, and use ratios in a variety of forms and contexts.
 - Determine whether a proportional relationship exists based on how one value influences another.
 - Analyze, represent, and solve real-world problems involving proportional relationships, with attention to appropriate use of units.
8. **Algebraic Competence, Reasoning, and Modeling Objective:** Students will transition from specific and numeric reasoning to general and abstract reasoning using the language and structure of algebra to investigate, represent, and solve problems.
 - Demonstrate understanding of the meaning and uses of variables as unknowns, in equations, in simplifying expressions, and as quantities that vary, and use that understanding to represent quantitative situations symbolically.
 - Describe, identify, compare, and contrast the effect of multiplicative or additive change.
 - Analyze real-world problem situations, and use variables to construct and solve equations involving one or more unknown or variable quantities.
9. **Probabilistic Reasoning Objective:** Students will understand and critically evaluate statements that appear in the popular media.
 - Interpret statements about chance, risk, and probability that appear in everyday media.
 - Identify common pitfalls in reasoning about relative and absolute risk in terms of probability.
10. **Application Objective:** Students will understand, interpret, and critically evaluate quantitative information in order to make decisions in their financial and civic life.
 - Identify and critique erroneous, misleading, or conflicting information.
Topics will be selected from: Compound interest, consumer debt, personal finance, social policies, economics, or environmental issues.

Meta Objectives: Upon completion of this course students will be able to:

1. Recognize and challenge their own beliefs and feelings about mathematics.
2. Work well with other students.
3. Find work partners that have similar speed, curiosity and learning edge.
4. Gain social competence in negotiating different ways of thinking.
5. Persevere when it gets difficult and frustrating.
6. Be ok making mistakes and learning from them.
7. Be more confident in doing mathematics.
8. Admit not knowing and ask questions to learn.
9. Be prepared and ready to try/learn when coming to class.
10. Realize that mathematics is more about creating and deep thinking than memorizing procedures.
11. Be curious about mathematics.
12. Recognize how they learn best and put a plan into action.
13. Enjoy the challenge of reasoning.
14. Only accept mathematics that makes sense to them.
15. Communicate mathematical ideals in writing and orally.

Course Requirements:

<u>Grading Scale:</u>		<u>Grading Policy:</u>
90 -100%	4.0	Class Participation: 5%
85 - 89%	3.5	Online CM Prep: 15%
80 - 84%	3.0	Smartbook: 10%
75 - 79%	2.5	Quizzes: 35%
70 - 74%	2.0	In-Class Work, etc.: 15%
65 - 69%	1.5	Cumulative Final: 20%
60 - 64%	1.0	
50 - 59%	0.5	
0-49%	0.0	



Grading Information: A 2.0 or "C" is a passing grade. Only courses with passing grades count toward graduation. This course will not transfer for credit.

Online Prep Homework (15%):

- These assignments must be done outside of class time on a computer with internet access at ConnectMath (reachable through connectmath.com).

- You have an unlimited number of tries to do the practice assignments before you submit them (up until the due date). Thus, all of your practice assignments should receive full credit, if you keep trying until you get a perfect score.
- **Late** homework will be accepted at a 5% penalty per day over the due date for any questions not already complete. This penalty will be applied automatically in ConnectMath.

Online Smartbook Assignments (10%):

- These assignments must be done outside of class time on a computer with internet access at ConnectMath (reachable through connectmath.com).
- These assess your understanding of the vocabulary and mathematical concepts for each lesson.

In-Class Work (15%): There will be frequent in-class assignments (turned in for credit). These may be individual or group assignments. These may include but are not limited to the following: creating note sheet for MAT 130 exam, reflections on lesson topics, progress meetings with instructor, daily workbook checks, presenting incorrect thinking.

Quizzes (35%) There will be weekly quizzes (usually on Thursdays) that will be taken in class. These quizzes are the primary assessment for this course.

Final Exam (20%): The final exam is cumulative for the entire course. The final exam will only assess students on the concepts that were related to the course outcomes of MAT 040. The Final Exam will take place during the last week of the course and can NOT be taken early so do **NOT** schedule travel plans during that week or you will receive a **ZERO** on the final.

Participation (5%):

We will work on investigations in class, in groups, and on the white boards. You are expected to prepare for class, contribute and discuss meaningfully, communicate with your group, and present your group's material to the rest of the class. The following list contains 9 elements of successful participation:

1. Stay focused on doing mathematics during class.
2. Be prepared for class. You complete all assigned problems/tasks and email me if you get stuck.
3. Work constantly at your learning edge. This includes that if you are behind many other students you will come to office hours to catch up and if you are ahead of the class you are ready to work on extension questions.
4. Give your best effort in solving the mathematical investigations. This includes being persistent even if you feel frustrated at times. It also includes making mistakes, and learning from them.
5. Ask all your questions (to students and/or instructor).
6. Actively and respectfully listen to students and instructor.
7. Communicate about mathematics positively and meaningfully in your group. This means that your comments are relevant and reflect understanding of the material and previous remarks from students. Communicate at appropriate times -- not too little and not too much.
8. Communicate about mathematics positively and meaningfully in whole class discussions.
9. Be reflective about yourself as a learner. Change your perception of doing mathematics if applicable.

Notebook (not part of your grade): I suggest writing all of your thinking/work during class and outside of class in a notebook or to collect them in a binder. This will allow you (and me) to see how you progress in your thinking and how much effort you put into your work. This notebook/binder is not meant to contain "perfect work" but instead all your attempts, thinking and mistakes. Work that you hand in has to be written up separately.

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: Exploration, collaboration and communication are essential for this class, therefore attendance is mandatory and active participation contributes to your grade. Class attendance will contribute to a large portion of points for this area and are left to the discretion of the instructor. 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

Date	Event
January 14, 2019	Day and evening classes begin
January 14, 2019 – May 2, 2019	Semester Dates
March 11 – 14 2019	Spring Break
May 2, 2019	Last Day of Class
May 4, 2019	Grades Due

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: In compliance with Federal Title IV funding requirements, as well as college initiatives, reporting of student participation in classes will occur at three designated times each semester. Instructors will assign one of three non-transcribed letter symbols to each student during each reporting period (see below). Students identified as no longer participating will be dropped or administratively withdrawn from the class, and students identified as needing academic assistance will be contacted.

Participation/Progress Symbols

H – The student is not doing acceptable work and needs **Help** to be successful.

Q – The student has not participated and the instructor believes they have unofficially withdrawn(**Quit**). These students will be dropped/withdrawn from the class.

V – The instructor **Verifies** that the student is participating and doing acceptable *work*.

Academic Honesty Policy:

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism is defined as the failure to give credit for the use of material from outside sources.

Plagiarism includes but is not limited to:

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating is defined as obtaining answers/material from an outside source without authorization.

Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

Classroom Behavior Policy:

Instruction for this course occurs primarily from group and whole class discussions. It is expected the students and instructors will have different ideas. For the classroom to function effectively individuals and their ideas will be both heard and respected. Specific classroom behaviors will be determined collectively on the first day of class. Students are expected to follow the agreed guidelines for maintaining a safe and productive environment.

Where to Get Help...

Office Hours: You are warmly invited to come and see me whenever you are faced with questions, confusion or concerns -- or to share an exciting discovery. Office hours are times when I'm available specifically for you. Please do take advantage of this opportunity. In addition, if my office door is open throughout the week: you are welcome to check in for help on those occasions, as well. If our schedules don't match, email or skype/facetime is a good way to get in touch: feel free to suggest a few times that would work for your schedule and we can make special arrangements.

Center for Student Success: (138 Bert Walker Hall, Central Campus). The Center for Student Success has tutoring available for free to students enrolled in Math 040. Math tutors are always on staff when the Center is open, you can drop in anytime. You can get help with take-home work, ConnectMath homework, and more. The Center is located on the first floor of 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>.

ConnectMath: There are videos, extra problems, sample exams, lecture notes, PowerPoint lectures and more available in ConnectMath. 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!