

Math 139-81 Course Syllabus Spring 2018

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MyMathLab Website:	www.mymathlab.com
MyMathLab Course ID:	main20192
Class information	Monday & Wednesday 3-5:18pm Clyde LeTarte Hillsdale Room #13, June 23 – August 15
Office Hours:	M/W 10:18am-noon, 2:18-3pm

Required Materials: MyMathLab Student Access, LARGE 3-ring binder, LARGE eraser, pencils, graphing calculator (TI-84 Calculator **strongly recommended**)

Please note: Access to a computer with Internet is required for this section of Math 139. 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: Algebraic functions, graphs and models are addressed. Emphasis is placed on the following function types: polynomial, exponential, logarithmic, rational and radical. In all topic areas, covered content includes simplifying expressions, solving equations, graphing using transformations, mathematical modeling and problem solving.

The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. Prerequisite: MTH 039, with 2.0 minimum or PRE EQV.

Math 139 Core Course Objectives:

All objectives refer to the following function types: polynomial, particularly cubic and higher order polynomials, exponential, logarithmic, rational, radical. Students successfully completing Math 139 should be able to:

1. Functions: Identify functions, use function notation, compositions of functions, inverse functions, domain and range
2. Understand and use mathematical properties to simplify expressions
3. Use algebraic and graphical methods to solve equations
4. Graph functions using transformations of basic graphs; understand relationships between algebraic statement and graphical features of a function such as intercepts, asymptotes, and turning points
5. Use a combination of manual and technology-enabled methods to find, use, and interpret mathematical models for data

Math 139 Associate Degree Outcomes: All courses at Jackson Community College address one or more of the institutionally defined Associate Degree Outcomes (ADOs). Math 131 contributes to the following outcomes.

ADO 3: - Proficient - Demonstrate computational skills and mathematical reasoning

- Demonstrates algebraic skills using polynomial, rational, radical, exponential, logarithmic, and trigonometric expressions and equations
- Applies properties of numbers and laws of exponents
- Displays “algebra sense” , avoiding common mathematical misconceptions
- Demonstrates fluency manipulating and communicating with mathematical symbols and terminology
- Uses symbolical, visual, numerical and verbal representations to analyze information.
- Demonstrates logical reasoning
- Carefully documents process used to reach conclusion
- Estimates and checks mathematical results for reasonableness
- Acquires and applies a broad range of mathematical skills and concepts as well as technology to facilitate efforts to visualize, interpret, and solve mathematical problems
- Uses graphic calculator and/or computer algebra systems to support mathematical reasoning and problem solving

ADO 7 –Proficient - Critical Thinking

- Articulates and defends conclusions
- Uses expanded vocabulary
- Recognizes and explains multiple perspectives
- Demonstrates creativity
- Proposes new concepts

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: 15%
80 - 84%	3.0	In-Class Work, Quizzes, etc.: 15%
75 - 79%	2.5	Exam 1: 15%
70 - 75%	2.0	Exam 2: 15%
65 - 69%	1.5	Exam 3: 15%
60 - 64%	1.0	Project: 5%
50 - 59%	0.5	Cumulative Final (ch 1-9): 20%
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, usually one week from the date the lesson was covered in class. 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.
- Late homework will be accepted at a 15% penalty per assignment over the due date that will be applied in mml.

Classwork: There will be frequent quizzes (almost daily) in-class assignments (turned in for credit). These may be individual or group assignments. Students that are absent may not make up the missed in-class assignments for any reason. However, a student's lowest three in-class work grades will be dropped prior to calculating the final grade.

Projects: There is one mandatory project in the course. Details will be given to you during the course of the semester.

Exams: Every exam has a few cumulative review questions on it. The final exam is cumulative for the whole course. You must make every effort to take your exam on the day it is given. If you must miss an exam under extreme circumstances you are required to notify your instructor in advance either in person, by e-mail or by phone. If you notify the instructor prior to the exam, a make-up test will be arranged and must be taken before the exam is passed back to the class or a zero will be given for that exam. If you fail to notify the instructor of your absence prior to the test, no make-up exam will be allowed and a zero will be given for that exam. Only official, instructor provided formula sheets may be used on exams. No books or notes may be used.

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 the 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.

Important Dates: Be sure to check out the JCC Academic Calendar for important dates such as holidays with no classes, last day to withdraw, etc. at http://www.jccmi.edu/academics/academic_calendar.htm

Extra Credit Policy: There will be no opportunities for extra credit. Your grade is based on your performance in class, not on extras. This is a mathematics department policy.

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 and continuing with the homework and assignments on their own. Please remember that office hours are not a replacement for class time.

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."

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 and pagers, 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 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 139. You can get help with take-home work, MyMathLab homework, and more. The Center is located in the Potter Center 1st floor.

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

Repeating the Course?

If you are repeating this course from a previous semester I want you to know I am proud of you for taking responsibility and ownership of your success. I will do my best to support you any way I can. I do ask for you to reflect on a few questions:

1. Thinking back on the previous semester, what contributed to your not being successful in MAT 139?
2. Was it a single event?
3. Was it out of your control?
4. Could it have been prevented?
5. Could this same situation arise again this semester?
6. If you are willing to share with me, either in person or in writing I would be honored to know and help you come up with a different strategy for you to be successful this semester!

Please remember that I am your #1 cheerleader to success!
When you accomplish your GOALS and DREAMS, I accomplish mine!

MAT 139: College Algebra
Calendar/Content FA 2017

Day	Textbook References	Topics
1	7.1 7.2 7.3	Functions/Function Notation, Domain and Range, Symmetry, Intercepts, Max/Mins
2	8.1 8.2	Review: Graphing Linear Functions Review: Finding Equation of a Line Review: Linear Modeling
3	8.3 8.4 8.7	Review: Graphing Quadratic Functions – in standard form and using transformations of graphs Review: Quadratic Modeling – includes techniques for solving quadratic equations
4	8.3 – 8.6	Solving Quadratic Inequalities Review: Quadratic Modeling
5	9.1	Higher Order Polynomials – Graphical Approach <ul style="list-style-type: none"> • Graphs of Power Functions - including transformations of graphs • General polynomials: End Behavior, Turning Points, Real Zeros
6	9.2 9.3	Higher Order Polynomials – Algebraic Approach <ul style="list-style-type: none"> • Solving Polynomial Equations, Complex Zeros • Fundamental Theorem of Algebra
7	9.6 9.1	Solving Inequalities Containing Polynomials Modeling with Higher Cubic Polynomials
8	8.8	Absolute Value Functions <ul style="list-style-type: none"> • Graphing - using transformations of graphs • Solving Equations and Inequalities; Applications Review Unit One
9		Test 1
10	1.1 1.2	Simplifying Expressions with Exponents (Integer, Rational)
11	1.3 10.3 1.4	Graphing Exponential Functions – include transformations of graphs Finding Equations of Exponential Functions
12	1.5 10.3	Modeling with Exponential Functions
13	2.1 2.2	Compositions of Functions Inverse Functions
14	2.3 10.4	Introduction to Logarithms Graphing Log Functions - include transformations of graphs

		Applications of Logarithms (pH, decibel, Richter)
15	2.4 2.5	Power Property of Logs; Solving Basic Exponential/Log Equations Modeling with Exponential Functions
16	2.6 2.7	More Properties of Logs; Use in Solving Exponential/Log Equations Natural Exponential and Log Functions – Intro and Equation Solving
17	2.7 10.7,10.8,10.9	Applications and Modeling with Exponential and Log Functions Review Unit 2
18		Test 2
19	3.1 9.4 9.5	Rational Functions: Basic Graphs, Transformations, Domain/Range, Asymptotes, Holes Simplifying Rational Functions
20	3.2 3.3	Multiply/Divide Rational Expressions Add/Subtract Rational Expressions
21	3.4 3.5 9.6	Simplify Complex Fractions Solve Rational Equations and Inequalities
22	3.6 3.7 3.8 7.7	Modeling with Rational Functions Proportions and Similar Triangles Variation
23	4.1 4.2	Simplifying Radical Expressions Add, Subtract, Multiply Radicals (revisit complex arithmetic)
24	4.3 4.4	Quotients of Radicals; Rationalizing Denominators Graphing Radical Functions; Transformations
25	4.5 4.6 5.3	Solving Radical Equations Modeling with Square Root Functions Pythagorean Theorem, Distance Formula Review Unit 3
26		Test 3
27	5.3 5.4 11.3	Conic Sections (Circles, Ellipses) Completing the Square to Graph Using Transformations of Graphs
28	5.4 11.2 11.4	Conic Sections (Parabolas, Hyperbolas)
29	5.5 12.1	Solving Nonlinear Systems of Equations Review
30		Final Exam