# MAT 173 Course Syllabus
## Spring 2015 Online w/Campus Requirement

**** Please read the following carefully, as you are responsible for its content!***

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**_Communication with me_:**  Please email me through Blackboard Messages only.  The only time you should need to use my email of sleone@mxcc.edu is if Blackboard is down.  To email me through Blackboard, go to Messages on the navigation bar on the left and you will be able to find my name to send me a message.   Please allow 24 hours for me to get back to you once you have emailed me.

**_Course Title_:**  College Algebra with Technology, CRN 1268

**_Pre-requisites_:**  *Eligible for ENG\*101 and MAT \*137 with a grade of "C" or better OR eligible for ENG\*101 and math placement.*

**_Course Description_:**  This course continues the algebra sequence. Topics include operations with complex numbers; functions; numeric, algebraic, and graphic techniques as applied to the following functions: polynomial, rational, radical, piecewise, and absolute value; modeling and applications using the above functions; exponential expressions and equations; logarithmic expressions and equations; conic sections. Optional: Systems of nonlinear equations. A graphing calculator is required for this course.

**_Required Materials:_**
- Precalculus with Modeling and Visualization, 5e, by Gary Rockswold, Pearson, 2014, **either in hard copy, or available as the ebook** after purchasing access to MyMathLab. See below for Online Material.
- Graphing Calculator –TI 84/TI 83 plus preferred
- Graph Paper
- Online Material: Access to MyMathLab http://pearsonmylab.com - This provides access to a lot of study resources along with ALL homework exercises, quizzes and tests. MyLab/Mastering or MyMathLab (MML) requires a course ID (posted in an announcement) and an Access Code to register (needs to be purchased).  See more details under MyMathLab below.

**_General Expectations:_** College Algebra can be a very challenging course when taken in a traditional classroom.  Taking the course online can make it that much more difficult to stay on top of the material.  It is crucial that you are doing work several times each week during this semester to be successful.  Please do not wait until the weekend the assignments are due to complete them. If we were to meet in a classroom, you would be spending about 4 hours in class, and a minimum of another 5-6 hours outside of class doing work.  Please keep that in mind to give yourself a guideline as to how many hours you will need to dedicate to this course.

**_Blackboard Learn:_**  The entire course is set up using Blackboard Learn.  I am often going to abbreviate this to BB.  In BB you will find links to complete your homework and assessments, read brief summaries on your weekly topics, follow the calendar, contact me and post discussions.  There are also links for help on BB.  It is your responsibility to be logging on to BB

and checking for announcements and following along with the course calendar.  There is a hotline available for BB help 24/7.  The number for this is 866 940 1928.

*Calendar:*  You will find a one-page calendar with the topics and due dates for each week of the semester.  I strongly encourage you to print this out during the 1st week of classes and use it as a reference each week so you don't miss any due dates.

*Weekly Notes:*  At the beginning of each week, a brief summary of the week's topics and assignments will be posted for you to read. These weekly postings will be under Weekly Notes and Materials on the task bar in Blackboard.  Please be sure to start your week off by reading these weekly postings.  I will be reminding you of upcoming due dates in these postings so it is a great way to keep track of what's due in each upcoming week.

*Homework:*  Each week you will be assigned a homework assignment that you are to complete using My Lab Mastering/MyMathLab, abbreviated MML.  You get to MML by using the link on Blackboard.  **With your textbook, you should have purchased a MyMathLab Access Kit.  In that kit is an access code that you will need in order to register with My Lab/Mastering.**  You can also purchase an access code directly from the website with a credit card.  You will have to register using your access code ASAP to start completing your assignments.

Once you have registered for the first time in MML, you can either access the course through BB, or log in directly to MML by going to www.pearsonmylab.com .  Both links will take you to the same login page

You can work on the homework as many times as you like before the due date.  **You will get three attempts at each question before MML marks that question incorrect.  When that happens, you may choose "Similar Problem" and you will be given a new problem to try.**  All homework assignments are due at the end of the week the topic is covered.  For example, MML HW #1 is due Sunday Jan 25.  This assignment is on the topics covered the week of Jan 21.  It is the expectation that you work on the material during the week/weekend, complete the homework by the end of the week and then move on to the next week's material.  Before attempting MML homework, you will want to read the assigned sections from text and try the exercises at the end of each section.  There are answers to the odd exercises in the back of the text so that you can check your work before completing your MyMathLab homework.  Because this class is online and you are doing the work independently, it is critical that you stay on top of the material.  Please make sure you are submitting on time! NO LATE HOMEWORK WILL BE ACCEPTED!

***MyLab Mastering has many great features to help with the material.  Once you are registered and logged onto MSL, be sure to look at the task bar on the left to see what else it has to offer. There are chapter notes, additional exercises, power point slides,vidoes with an instructor working through problems, and sample tests/quizzes.  Also, My Lab/Mastering offers a Study Plan to show you the areas you need to work on.  Every time you complete an assignment, the study plan is updated and you can go in and try more examples from that material.  Please check this stuff out so you know where to go if you start having difficulty with the material.

*Quizzes/Tests***:**  Your quizzes and tests are also taken in MyMathLab. Exams are timed, so you will have to complete them in one sitting.  Once you open the quiz/exam, the timer will start. The reason tests are timed is to make sure that everyone has been fully prepared and mastered the material BEFORE taking the test.  If you find that you are running out of time on these assessments, it is most likely because you have not practiced enough.  If you are spending a good

deal of time looking through your book/notes while you are taking a test, you will almost definitely run out of time. A short description of each exam, including amount of time you have to complete will be in your weekly notes and also in the calendar. All tests/quizzes must be completed by midnight on the due date. See the calendar in BB for specific dates. Each week you will have at least a quiz or test due, as well as your discussion and weekly homework in MML. The expectation is that you are working on the homework all week and you take the test once you have completed that and feel comfortable with the material. Tests/Quizzes will be available the Monday before the due date. Those dates are also on your BB calendar. You will able to view your test grades as soon as you have submitted your answers, but you can only review your answers once the due date has passed. Please follow the calendars so you do not miss a due date. **NO LATE EXAMS WILL BE ACCEPTED UNLESS YOU HAVE A PHYSICIAN'S NOTE OR SOME DOCUMENTATION STATING YOU WERE UNABLE TO TAKE THE EXAM ON TIME**

****Note about partial credit—My Lab/Mastering will give partial credit if you get one part of a question correct but not another part. However, since it is a computer grading these tests/quizzes, it will not award you partial credit if you have an answer wrong due to rounding, or some other very minor error. Once each due date passes, please review your test/quiz in MML. You can email me if you that feel there are some questions that you deserve partial credit on, along with your work. I can adjust the grade manually if I find you deserve more credit than you were given.

*Final Exam:* You will be required take your final exam on campus during one of the two provided times. The format of the exam will be exactly the same as every other exam, and taken on MML. The two options for times will be provided to you during the first month of class so that you can plan ahead.

YOU MUST EARN AT LEAST A 60% ON THE FINAL EXAM IN ORDER TO PASS THE COURSE. Failure to earn a 60% will result in an F for the course, regardless of your calculated average.

*Discussions:* You will have weekly discussions throughout semester, the first one being due on Sunday Jan 25. The due dates are on your calendar. Not all of the discussions will be mandatory. You will see if the discussion is OPTIONAL or MANDATORY when you read the description. Go to DISCUSSIONS on the navigation bar in BB to get full description and to post your response to the discussion. Some of these discussions will be open ended questions like "Tell the class one thing that you are having difficulty with this week", and some will be worth more points and be problems that relate to the material we are covering. For some discussions you will be able to read other responses and some you will be replying directly to me.

*Use of the Calculator:* We will use the graphing calculator for almost every topic we cover. It is extremely important that you get comfortable using the calculator from the very beginning of class. The best calculator for you to have is the TI-83 or 84. I will put step-by-step instructions in the weekly notes each week for using the calculator. I will also provide some videos to help you get comfortable with graphing on the calculator.

*Grading***:** Your final grade will be comprised of the following:

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| Tests/Final Exam | 60% |
| Homework | 20% |
| Quizzes | 10% |
| Discussions | 10% |

*\*\*\*Your discussion grades can be found under MY GRADES in Blackboard.  The rest of your grades will be in MyMathLab\*\*\**

*Grading Scale:*  The following is the grading scale for MxCC College:

| A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | F |
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| 93 – 100 | 90 – 92 | 87 – 89 | 83 – 86 | 80 – 82 | 77 – 79 | 73 – 76 | 70 – 72 | 67 – 69 | 63 – 66 | 60 – 62 | < 60 |

*Tutoring:*  MxCC offers **FREE TUTORING** on campus (Chapman Hall 711), at the Meriden Center, and online (etutoring.org).  For more information, visit the College Learning Center Website (click "College Learning Center" on the www.mxcc.commnet.edu homepage) or call (860) 343-5770.  Take advantage of these services and start to excel in your classes!

*Withdrawal***:**  You may withdraw from this class any time before the end of the 11th week of the semester.  A completed and signed withdrawal form must be on file in the Records Office by the deadline in order to receive a "W" on your transcript.  If you fail to complete this process on time, you will receive a letter grade at the end of the semester, which will include zeroes for any work not submitted.  Course withdrawals may affect financial aid and veteran's benefits, so please make this decision carefully, and with the help of your advisor.  Please see the Academic Calendar and the College Catalog for specific dates and procedures regarding the withdrawal process.

*Math Placement Tests:*  The purpose of the Math Placement Exam is to assess a student's background and place him/her in an appropriate level of mathematics so as to increase the likelihood of a student's success.  If a student believes that he/she has been misplaced in a math class, the student is responsible for speaking with his/her math teacher during the first week of class.  If, after reassessing the placement, the math teacher believes that the student should be reassigned to another math class, the student must complete the course change process before the second week of class.

## IMPORTANT COLLEGE POLICIES!!  PLEASE READ CAREFULLY!

For information about the college's policies and procedures regarding academic honesty, accessibility/disability services, attendance, audio-recording in the classroom, grade appeals, plagiarism, religious accommodations, weather and emergency closings, and more,

please go to the following website: www.mxcc.edu/catalog/syllabus-policies/ or scan the QR code with your smart phone. Also, please become familiar with the policies regarding nondiscrimination, sexual misconduct, and general student conduct at the following website: www.mxcc.edu/nondiscrimination/.

Departmental Outline

| *Course Description* |
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| This course continues the algebra sequence. It is primarily intended for students who plan to continue on to Precalculus. Topics include operations with complex numbers; functions; numeric, algebraic, and graphic techniques as applied to the following functions: polynomial, rational, radical, piecewise, and absolute value; modeling and applications using the above functions; exponential expressions and equations; logarithmic expressions and equations; Optional: conic sections. A graphing calculator is required for this course. |
| *General Objectives of the Course* |
| Students in this course will:<br>• Define and represent different functions numerically, verbally, symbolically and graphically<br>• Understand and recognize the characteristics of key functions and their interrelations by examining patterns among the functions and their corresponding graphs by way of inductive reasoning<br>• Identify, interpret and model various types of quantitative relationships within applications<br>• Use technology to explore and draw reasonable conclusions from graph, tables and equations<br>• Provide clear, logical and organized explanations through verbal and written responses. |

| Unit # | Instructional Unit | Specific Objectives of Unit |
| --- | --- | --- |
| 1 | Functions and Inequalities | • Define function, domain, and range.<br>• Identify intervals on which a function's graph increases and decreases.<br>• Determine the average rate of change for non-linear functions.<br>• Calculate the difference quotient for non-linear functions<br>• Use linear regression to model data with technology.<br>• Evaluate piecewise defined functions. |

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| | | • Produce graphs of absolute value and piecewise-defined functions both by hand and with technology.<br>• Solve absolute value inequalities both by hand and with technology.<br>• Produce graphs involving shifting, reflecting, stretching, and shrinking of known graphs.<br>• Combine functions by composition.<br>• Define inverse functions and find the inverse of elementary functions. |
| 2 | Polynomial, Rational and Radical Functions | • Demonstrate understanding of the concept of complex numbers.<br>• Perform operations with complex numbers.<br>• Factor polynomial expressions.<br>• Factor expressions that contain negative and/or rational exponents.<br>• Use factoring to solve polynomial equations.<br>• Evaluate, simplify, and perform operations on traditional rational functions or expressions.<br>• Solve traditional rational equations algebraically.<br>• Evaluate, simplify, and perform operations on traditional radical functions or expressions.<br>• Solve traditional radical equations algebraically. |
| 3 | Additional Non-linear Concepts | • Graph quadratic, polynomial, rational, and radical functions both by hand and with technology.<br>• Divide polynomials using both synthetic and long division.<br>• Find real and complex zeros for polynomial functions using the: leading coefficient test, remainder theorem, factor theorem, rational root test and/or technology.<br>• Solve polynomial and rational inequalities both by hand and with technology.<br>• Determine the domain and range for rational functions.<br>• Find equations of vertical, horizontal, and oblique asymptotes.<br>• Determine domain and range for radical functions.<br>• Apply polynomial, rational, radical, and piecewise-defined functions as mathematical models.<br>• Use quadratic, polynomial, and power regression to model data with technology. |
| 4 | Exponential and Logarithmic Functions | • Simplify exponential expressions.<br>• Solve exponential equations in one variable algebraically.<br>• Demonstrate understanding of the number $e$.<br>• Demonstrate understanding of the concept of logarithm. |

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| | | • Rewrite logarithmic expressions in exponential form, and vice versa.<br>• Explain the difference between common and natural logarithms.<br>• Apply the properties of logarithms to simplify logarithmic expressions.<br>• Solve logarithmic equations in one variable.<br>• Graph exponential and logarithmic equations in two variables both by hand and with technology.<br>• Apply exponential and logarithmic functions as mathematical models.<br>• Use exponential, logarithmic and logistic regression to model data with technology. |
| 5 | Conic Sections (Optional) | • Demonstrate understanding of the concept of conic sections.<br>• Define parabola, circle, ellipse, and hyperbola.<br>• Graph parabolas by hand and with technology; find and interpret the standard equation of a parabola; identify the vertex, focus, directrix, latus rectum (and find its length).<br>• Graph ellipses by hand and with technology; find and interpret the standard equation of an ellipse; identify the center, foci, major and minor axes (and find their lengths), eccentricity.<br>• Graph hyperbolas by hand and with technology; find and interpret the standard equation of a hyperbola; identify the vertices, center, foci, transverse and conjugate axes (and find their lengths), asymptotes.<br>• Classify a conic from its general equation.<br>• Solve systems of nonlinear equations. |