

Math 141 - Precalculus Online - Syllabus

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Note about e-mail:

You can e-mail me a question any time.

I try to return e-mail within 48 hours, with the exception of weekends; if you e-mail after 3 pm on a Friday, you may not hear back from me until the following Monday.

If you have a personal question, e-mail me directly at BaarsonMonaG@jccmi.edu
When you e-mail, put **MTH141 Online** in the subject line followed by your name.
So, the e-mail will come to me as: **Subject: MAT141 Online Your Name.**

If you need an immediate answer put: **Subject: MAT141 Online Your Name URGENT**

Course Description:

Major emphasis is on the concept of functions. The students will study polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions, their properties, graphs, and related equations and applications. Additional topics include systems of equations, matrices, conic sections, sequences and series, and probability. A graphing calculator is required and will be used extensively.

Prerequisite(s):

Math 131 or equivalent

Course Goals:

The purpose of this course is to develop an understanding of functions, advanced concepts of algebra and trigonometry. We will also learn to use problem solving techniques to obtain a sense of how and why algebra is used, and to be able to relate these problems and use the learned problem solving techniques to real life applications. This course also will have an extensive use of the TI-83 Plus graphing calculator. Great emphasis will be placed on understanding of terms, concepts, principles and theories rather than cramming and memorization.

Performance Objectives:

I. Core Course Objectives

- Simplify polynomial, radical, and rational expressions, and algebraic expressions involving radicals, integer exponents, rational exponents, trigonometric functions, combinations, permutations, factorials, series, sequences, and matrices using appropriate algebraic properties, algebraic skills, and algorithmic processes. (ADO 3)
- Use appropriate algorithmic processes (this includes processes that involve matrices) to solve: (ADO 3)
 - linear, absolute value, quadratic, radical, rational, exponential, and logarithmic equations
 - linear, absolute value, polynomial, and rational inequalities
 - linear and nonlinear systems of equations
 - trigonometric and inverse trigonometric equations
- Manipulate and identify functions graphically, symbolically, and numerically. (ADO 3)
- Solve application problems involving many different subject areas using algebraic processes, counting techniques, and the binomial theorem. (ADO 7)
- Apply fundamentals of right triangle trigonometry and solve application problems. (ADO 3 and ADO 7)
- Use appropriate technology (such as a graphing calculator) to enhance the understanding of objectives. (ADO 3)
- Have knowledge of science and technology used in this area of study.

II. Associate Degree Outcomes

The Board of Trustees has determined that all JCC graduates should develop or enhance certain essential skills while enrolled in the college. All courses at Jackson Community College address one or more institutionally defined Associate Degree Outcomes (ADOs).

MATH 141 addresses several of these **Associate Degree Outcomes** (see below) :

- Demonstrate computational skills and mathematical reasoning. (ADO 3)
- Critical thinking and problem solving (ADO 7)

Associate Degree Outcomes:

Mathematics is required for graduation from Jackson Community College and is a component of general education. General education promotes essential skills and understandings that collectively define the educated person. One aspect of general education is the development of practical skills which is guided by the associate degree outcomes (ADOs).

A graduate from JCC should possess the following skills (associate degree outcomes):

ADO 1: Write clearly, concisely and intelligibly (3 credits)

ADO 2: Speak clearly, concisely and intelligibly

ADO 3: Demonstrate computational skills and mathematical reasoning (3-5 credits)

ADO 4: Demonstrate scientific reasoning (4-5 credits)

ADO 5: Understand human behavior and social systems the principles which govern them, and their implications for the present and future (3-4 credits)

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

ADO 7: Think critically

ADO 8: Make responsible decisions in personal and professional contexts

ADO 9: Work productively with others, recognizing individual contributions to group success

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Materials Needed for the Course

- See the Document: **Course Materials**

Course Topics and Assignments

The topics covered in the course, the assignments and the due dates for Homework, Quizzes, Discussion Forums/Link Analysis Paper, Unit Exams, and Final Exam can be found in the following documents:

- See document: **Math 141 Online Course Calendar by Weeks**
- MyMathLab: The **Course Calendar by Weeks** is to be used in conjunction with the due dates found in "MyMathLab" under Do Homework, then Show All. The **Course Calendar by Weeks** will help the student to know what sections and topics in the textbook need to be learned and completed each week in order to meet the due dates posted in "MyMathLab" under Do Homework, then Show All.

Grading Procedures

- See document: **Math 141 Online Grading Procedures**
- See document: **Math 141 Online Grading Scale**

Available Help

- Tutors (plus additional services for academic success) can be accessed by calling 796-8415 or by stopping by the Center for Student Success, Bert Walker Hall Room 125.
- Students requiring special assistance (including those affected by the Americans with Disabilities Act) should contact the Center for Student Success. This is the first step in acquiring the appropriate accommodations to facilitate your learning.
- See the document: **Getting Help with Math 141 Online**

Late Work Policy

- **Homework** is to be completed on or before the due dates.
See: **Math 141 Online Class Calendar by Weeks and MyMathLab for due dates.**
- **Quizzes** are to be completed on or before the due dates.
See: **Math 141 Online Class Calendar by Weeks and MyMathLab for due dates.**
- **Unit Exams** are to be completed on or before the due dates.
See: **Math 141 Online Class Calendar by Weeks and MyMathLab for due dates.**
- **Midterm Exam and the Final Exam** are to be completed and turned in, at the JCC Testing Lab, on or before the due dates.

Or, the **Midterm Exam and Final Exam** are to be completed, mailed to me by US Mail and postmarked on or before the due dates (if you have chosen to take your midterm and final exam at another college testing center or public library).

See: **Math 141 Online Class Calendar by Weeks and MyMathLab for due dates.**

Remember that the due dates are completion dates and postmark dates for the Midterm Exam and Final Exam.

- **Discussions and Projects: Discussions, Link Analysis Paper and other Project** are to be completed on or before the due dates.
See: **Math 141 Online Class Calendar by Weeks and MyMathLab for due dates.**

Grading Scale

- See Document: **Math 141 Online Grading Scale**

Class Calendar for Assignments and Due Dates

- See document: **Math 141 Online Class Calendar by Weeks and MyMathLab**
- See MyMathLab: The **Course Calendar by Weeks** is to be used in conjunction with the due dates found in "MyMathLab" under Do Homework, then Show All. The **Course Calendar by Weeks** will help the student to know what sections and topics in the textbook need to be learned and completed each week in order to meet the due dates posted in "MyMathLab" under Do Homework, then Show All.

Please note that the due dates found in MyMathLab are the official due dates (assignments cannot be turned in past the dates in MyMathLab). The dates on the **Course Calendar** are dates that assignments should be completed in order to complete the coursework without feeling rushed.

Other General Information

- **Instructional Philosophy:** Education is a self-initiated, active, goal-directed process, leading to a change and/or expansion of the students understanding of and ability to use the subject material. The student is expected to be accountable for the learning process. The instructor should be viewed as a facilitator and resource person to assist in the process.
- **Academic Honesty:** (Excerpt from JCC policy; see instructor for a copy of the complete policy.) Academic Honesty is expected of all students. It is the ethical behavior that includes producing their own work and not representing others' their own, either by plagiarism, by cheating or by helping others to do so. Faculty members who suspect a student of academic dishonesty may penalize the student by...assigning a failing grade for the paper, project, report, exam or the course itself.
- **Audits:** Must be registered during the first week of class. You will not receive a grade or credit for the course.
- **Drop and Withdraw** deadlines are on the *Academic Calendar website* found at http://www.jccmi.edu/academics/academic_calendar.htm. If you do not wish to complete the class and receive a grade, because you are not happy with your grade or for any other reason, you must withdraw by this date. The instructor may withdraw any student who does not complete assignments and/or tests in a timely manner. However, **do not assume that I will withdraw you.**
- **Incompletes** will be given only in accordance with JCC policy. (Excerpt from JCC policy; see instructor for a copy of the complete 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.
- **General College Policies:** You should read the policies and procedures of the college as specified in the "Student Handbook".

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Course Calendar by Weeks with Assignments and Due Dates

First and foremost, it is extremely important that you understand that **this is not a self-paced course!** Deadlines must be met in order to receive credit for the assignment. In order to get the complete understanding of the subject matter being presented in this course so that you will be able to progress competently to the course that comes after this, namely Calculus I, it is necessary that you progress through the material in a timely and efficient manner. The material has to be learned in a way that allows you to digest the concepts being taught. Therefore, we will have a *Course Calendar by Weeks with Assignments and Due Dates*.

The Course Calendar by Weeks is to be used in conjunction with the due dates found in "MyMathLab" under Do Homework, then Show All. The Course Calendar by Weeks will help the student to know what sections and topics in the textbook need to be learned and completed each week in order to meet the due dates posted in "MyMathLab" under Do Homework, then Show All.

On the **Course Calendar by Weeks**, you will find the various types of activities that we will be doing to receive a grade for this course. In order to complete the course, you must complete the requirements in each of the five categories: Homework, Quizzes, Discussion Forums/Link Analysis Paper, Unit Exams, the Midterm and the Final Exam.

You should also refer to the due dates found in **MyMathLab** to help you meet the assignment due dates for the course.

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Course Calendar by Weeks with Assignments and Due Dates

Day	Sections	Topics Covered and Assignments To Be Working On
Week 1	Due by Sept 2	MyMathLab - Get Signed Up Immediately!!!
	Due by Sept 7	Proctor Selection Form - Quiz in MyMathLab/CourseCompass
	Due by Sept 15	Proctor Selection Form - Fill Out and Send to Instructor
	Due by Oct 18	Midterm Exam
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
	R.1	The Real-Number System
	R.2	Integer Exponents, Scientific Notation, and Order of Operations
	R.3	Addition, Subtraction, and Multiplication of Polynomials
Sept 2 to Sept 6	R.4	Factoring
	R.5	The Basics of Equation Solving
	R.6	Rational Expressions
	R.7	Radical Notation and Rational Exponents
	1.1	Introduction to Graphing
	1.2	Functions and Graphs
	1.3	Linear Functions, Slope and Applications
	1.4	Equations of Lines and Modeling
	1.5	Linear Equations, Functions, Zeros, and Applications
	1.6	Solving Linear Inequalities
	☆☆☆☆☆	Review for Unit Exam #1 - Chapters R and 1
	☆☆☆☆☆	Unit Exam #1 - Chapters R and 1
Week 2		
	Due by Sept 2	MyMathLab - Get Signed Up Immediately!!!
	Due by Sept 7	Proctor Selection Form - Fill Out and Send to Instructor
	Due by Sept 15	Proctor Selection Form - Quiz in MyMathLab/CourseCompass
	Due by Oct 18	Midterm Exam
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Sept 7 to Sept 13	2.1	Increasing, Decreasing, and Piecewise Functions
	2.2	The Algebra of Functions
	2.3	The Composition of Functions
	2.4	Symmetry and Transformations
	2.5	Variation and Applications

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Course Calendar by Weeks with Assignments and Due Dates

Day	Sections	Topics Covered and Assignments To Be Working On
Week 3		
	Due by Sept 7	Proctor Selection Form - Fill Out and Send to Instructor
	Due by Sept 15	Proctor Selection Form - Quiz in MyMathLab/CourseCompass
Sept 14 to	Due by Oct 18	Midterm Exam
Sept 20	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
	2.4	Symmetry and Transformations
	2.5	Variation and Applications
	3.1	The Complex Numbers
	3.2	Quadratic Equations, Functions, Zeros, and Models
	3.3	Analyzing Graphs of Quadratic Functions
Week 4		
	Due by Oct 18	Midterm Exam
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Sept 21 to	3.1	The Complex Numbers
Sept 27	3.2	Quadratic Equations, Functions, Zeros, and Models
	3.3	Analyzing Graphs of Quadratic Functions
	3.4	Solving Rational Equations and Radical Equations
	3.5	Solving Equations and Inequalities with Absolute Value
Week 5		
	Due by Oct 18	Midterm Exam
Sept 28 to	Due by Nov 9	Link Analysis Paper
Oct 4	Due by Dec 8	Final Exam
	☆☆☆☆☆	<i>Review for Unit Exam #2 - Chapters 2 and 3</i>
	☆☆☆☆☆	<i>Unit Exam #2 - Chapters 2 and 3</i>
	4.1	Polynomial Functions and Modeling
	4.2	Graphing Polynomial Functions
	4.3	Polynomial Division; The Remainder and Factor Theorems

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Course Calendar by Weeks with Assignments and Due Dates

Day	Sections	Topics Covered and Assignments To Be Working On
Week 6		
	Due by Oct 18	Midterm Exam
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Oct 5 to	4.1	Polynomial Functions and Modeling
Oct 11	4.2	Graphing Polynomial Functions
	4.3	Polynomial Division; The Remainder and Factor Theorems
	4.5	Rational Functions
	4.6	Polynomial and Rational Inequalities
Week 7		
	Due by Oct 18	Midterm Exam
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Oct 12 to	4.5	Rational Functions
Oct 18	4.6	Polynomial and Rational Inequalities
	5.1	Inverse Functions
	5.2	Exponential Functions and Graphs
	5.3	Logarithmic Functions and Graphs
	☆☆☆☆☆	<i>Midterm Review - Review Found in JetNet</i>
	☆☆☆☆☆	<i>Midterm Exam - Chapters R, 1, 2, and 3 (see below)</i>
		<p><u>Please Note: The Midterm Exam must be taken in a proctored environment. The Midterm Exam is a paper and pencil exam in which all work must be shown to receive full credit.</u></p> <p style="background-color: yellow;">The Midterm exam must be Postmarked or taken in JCC Testing on or before: October 18, 2014</p>

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Course Calendar by Weeks with Assignments and Due Dates

Day	Sections	Topics Covered and Assignments To Be Working On
Week 8		
	Due by Oct 18	Midterm Exam
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Oct 19 to	5.1	Inverse Functions
Oct 25	5.2	Exponential Functions and Graphs
	5.3	Logarithmic Functions and Graphs
	5.4	Properties of Logarithmic Functions
	5.5	Solving Exponential and Logarithmic Equations
	5.6	Applications and Models: Growth and Decay, and Compound Interest
	☆☆☆☆☆☆	Midterm Review - Review Found in JetNet
	☆☆☆☆☆☆	Midterm Exam - Chapters R, 1, 2, and 3 (see below)
		<p><u>Please Note: The Midterm Exam must be taken in a proctored environment. The Midterm Exam is a paper and pencil exam in which all work must be shown to receive full credit.</u></p> <p style="text-align: center;">The Midterm exam must be Postmarked or taken in JCC Testing on or before: October 18, 2014</p>
Week 9		
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Oct 26 to	☆☆☆☆☆☆	Review for Unit Exam #5 - Chapter 4 and 5
Nov 1	☆☆☆☆☆☆	Unit Exam #5 - Chapter 4 and 5
	6.1	Trigonometric Functions of Acute Angles
	6.2	Applications of Right Triangles
	6.3	Trigonometric Functions of Any Angle
	6.4	Radians, Arc Length, and Angular Speed

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Course Calendar by Weeks with Assignments and Due Dates

Day	Sections	Topics Covered and Assignments To Be Working On
Week 10		
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Nov 2 to	6.1	Trigonometric Functions of Acute Angles
Nov 8	6.2	Applications of Right Triangles
	6.3	Trigonometric Functions of Any Angle
	6.4	Radians, Arc Length, and Angular Speed
	6.5	Circular Functions: Graphs and Properties
	6.6	Graphs of Transformed Sine and Cosine Functions
Week 11		
	Due by Nov 9	Link Analysis Paper
	Due by Dec 8	Final Exam
Nov 9 to	7.1	Identities: Pythagorean and Sum and Difference
Nov 15	7.2	Identities: Cofunction, Double-Angle, and Half-Angle
	7.3	Proving Trigonometric Identities
	7.4	Inverses of the Trigonometric Functions
	7.5	Solving Trigonometric Equations

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Course Calendar by Weeks with Assignments and Due Dates

Day	Sections	Topics Covered and Assignments To Be Working On
Week 12		
	Due by Aug. 3	Project 1
	Due by Aug. 11	Final Exam
	7.3	Proving Trigonometric Identities
Nov 16 to	7.4	Inverses of the Trigonometric Functions
Nov 22	7.5	Solving Trigonometric Equations
	8.1	The Law of Sines
	8.2	The Law of Cosines
	☆☆☆☆☆☆	<i>Review for Unit Exam #3 - Chapter 6, 7, and 8</i>
	☆☆☆☆☆☆	<i>Unit Exam #3 - Chapter 6, 7, and 8</i>
Nov 26 to		Thanksgiving Break
Nov 30		No Classes
Week 13		
	Due by Dec 8	Final Exam
Nov 23 to	☆☆☆☆☆☆	<i>Review for Unit Exam #3 - Chapter 6, 7, and 8</i>
Nov 29	☆☆☆☆☆☆	<i>Unit Exam #3 - Chapter 6, 7, and 8</i>
	9.1	Systems of Equations in Two Variables
	9.2	Systems of Equations in Three Variables
	9.3	Matrices and Systems of Equations
	☆☆☆☆☆☆	<i>Comprehensive Final Exam Review - Review Found in JetNet</i>
	☆☆☆☆☆☆	<i>Comprehensive Final Exam (see below)</i>
		<p><u>Please Note: The Final Exam must be taken in a proctored environment. The Final Exam is a paper and pencil exam in which all work must be shown to receive full credit.</u></p> <p>The Comprehensive Final Exam must be Postmarked or taken in JCC Testing on or before: Monday, December 8, 2014</p>

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Course Calendar by Weeks with Assignments and Due Dates

Day	Sections	Topics Covered and Assignments To Be Working On
Week 14	Due by Dec 8	Final Exam
Nov 30 to	9.1	Systems of Equations in Two Variables
Dec 6	9.2	Systems of Equations in Three Variables
	9.3	Matrices and Systems of Equations
	10.1	The Parabola
	10.2	The Circle and the Ellipse
	10.3	The Hyperbola
	☆☆☆☆☆☆	<i>Comprehensive Final Exam Review - Review Found in JetNet</i>
	☆☆☆☆☆☆	<i>Comprehensive Final Exam (see below)</i>
		<p><u>Please Note: The Final Exam must be taken in a proctored environment. The Final Exam is a paper and pencil exam in which all work must be shown to receive full credit.</u></p> <p>The Comprehensive Final Exam must be Postmarked or taken in JCC Testing on or before: Monday, December 8, 2014</p>
Week 15		
	Due by Aug. 11	Final Exam
Dec 7 to	☆☆☆☆☆☆	<i>Comprehensive Final Exam Review - Review Found in JetNet</i>
Dec 13	☆☆☆☆☆☆	<i>Comprehensive Final Exam (see below)</i>
		<p>The Comprehensive Final Exam must be Postmarked or taken in JCC Testing on or before: Monday, December 8, 2014</p>
	10.1	The Parabola
	10.2	The Circle and the Ellipse
	10.3	The Hyperbola
	☆☆☆☆☆☆	<i>Review for Unit Exam #4 - Chapter 9 and 10</i>
	☆☆☆☆☆☆	<i>Unit Exam #4 - Chapter 9 and 10</i>
		<i>Finish up assignments in MML</i>
		<i>Note: The Last Day of this Class is December 18, 2014 at 11:59 am (or Noon)</i>
Week 16		
Dec 14 to	☆☆☆☆☆☆	<i>Review for Unit Exam #4 - Chapter 9 and 10</i>
Dec 18	☆☆☆☆☆☆	<i>Unit Exam #4 - Chapter 9 and 10</i>
(@ noon)		<i>Finish up assignments in MML</i>
		<i>Note: The Last Day of this Class is December 18, 2014 at 11:59 am (or Noon)</i>

