

MATH 116 – College Algebra

Summer 2018 Course Syllabus

James Jones, Professor of Mathematics
Mathematics, Science, & Business Division – Richland Community College

Course Meeting Information

Section 01 meets from 10:00 am to 11:50 am on Monday, Tuesday, Wednesday, and Thursday in room S137 on Richland's main campus. This course meets from May 29th through July 19th.

This is a face-to-face course, but the Canvas learning management system will be used. There is an online student orientation to Canvas and the College that must be completed prior to obtaining access to your courses in Canvas. We will not be using MyMathLab with this course.

Instructor Information

James Jones, Professor of Mathematics
Email: james@richland.edu
Web: <https://people.richland.edu/james/>

Phone: 217-875-7211, ext 6490
Office: C223
Canvas: <https://richland.instructure.com>

The best way to contact the instructor outside of class is through Canvas or by email. Please do not leave a voice mail as it will not reach the instructor in time to help you.

Office Hours

Office hours are not required of instructors during the summer term. If you have questions, please make arrangements to see me before class or after class.

Students are encouraged to come to class early each day and use that time to ask questions of the instructor, work on projects, or just socialize with other students in the course.

Text

College Algebra: Graphs and Models, 6th edition. Bittinger, Beecher, Ellenbogen, Penna. Copyright 2017, Pearson Education, Inc. ISBN-13: 978-0-13-417903-2 or ISBN-10: 0-13-417903-X.
(Required)

Electronic versions of the textbook are acceptable. We will not be using MyMathLab in this course.

Student Audience

College Algebra is the first college-level algebra course and serves as a gateway course into many of the science, engineering, technology, and mathematics (STEM) courses. It is also recommended for early childhood education, business, sequestration, network technology, programmer/analyst, chemistry, and computer science courses.

Prerequisite

The prerequisite for Math 116, College Algebra, is eligibility for ENGL 101 and one of the following: 1) MATH 098 with a C or better grade and MATH 095 with a C or better grade or one year of high school geometry, (2) satisfactory score on the mathematics placement exam, (3) a score of 22 or higher on the math ACT within three years of enrollment, and (4) a score of 560 on the math SAT within three years of enrollment).

Course Description

MATH 116 – College Algebra

Hours: 4 lecture - 0 lab - 4 credit

Math 116, College Algebra, is a concentrated study of the topics traditionally found in College Algebra. The topics include a quick and intense review of the topics from Intermediate Algebra, including real numbers, algebraic expressions, polynomials, equations, problem solving, complex numbers, and graphing. Major topics include functions, exponential and logarithmic functions, matrices, polynomial equations, inequalities, introduction to analytic geometry, conic sections, systems of equations, mathematical induction, and the binomial expansion theorem. A graphing calculator is required.

Applicable toward graduation where program structure permits.

- Certificate or degree: All certificates, A.A.S., A.L.S., A.A, A.S.
- Group requirement: Mathematics (AAS only)
- Area of Concentration: Not applicable.

Illinois Articulation Initiative (IAI)

The Illinois Articulation Initiative is a statewide transfer agreement. Their website is at <http://www.itransfer.org>.

The mathematics component of general education focuses on quantitative reasoning to provide a base for developing a quantitatively literate college graduate. Every college graduate should be able to apply simple mathematical methods to the solution of real-world problems. A quantitatively literate college graduate should be able to:

- interpret mathematical models such as formulas, graphs, tables, and schematics, and draw inferences from them;

- represent mathematical information symbolically, visually, numerically, and verbally;
- use arithmetic, algebraic, geometric, and statistical methods to solve problems;
- estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results; and
- recognize the limitations of mathematical and statistical models.

Courses accepted in fulfilling the general education mathematics requirement emphasize the development of the student's capability to do mathematical reasoning and problem solving in settings the college graduate may encounter in the future. General education mathematics courses should not lead simply to an appreciation of the place of mathematics in society, nor should they be merely mechanical or computational in character.

To accomplish this purpose, students should have at least one course at the lower-division level that emphasizes the foundations of quantitative literacy and, preferably, a second course that solidifies and deepens this foundation to enable the student to internalize these habits of thought.

Math 116, College Algebra, does NOT satisfy the Illinois Articulation Initiative Definition of a General Education Mathematics Course.

Illinois Mathematics and Computer Science Articulation Guide

The following statement is a joint statement of the Illinois Mathematics Association of Community Colleges (IMACC) and the Illinois Section of the Mathematics Association of America (ISMAA). It is contained in the [Illinois Mathematics Computer Science Articulation Guide](#) (IMACC, 2016, p. 2)

While College Algebra and Precalculus courses are taught at post-secondary institutions where needed, these courses should not fulfill general education or quantitative literacy requirements. The content and instructional pedagogy applied in these courses should continue to be reviewed with the goal of preparing students to be successful in calculus and other courses that depend on a similar level of knowledge, rigor and maturity. Adjustments to these courses should attempt to build upon appropriate changes in the K-12 curriculum that are a part of state-wide efforts to advance achievement for all students and, in particular, to smooth the transition from school to college.

Departments are advised not to attempt to design and teach college algebra and pre-calculus courses with the dual purpose as preparation for calculus and meeting goals for quantitative literacy and general education requirements. Expectations for mastery of the objectives considered essential preparation for subsequent calculus courses must take priority and time constraints, together with cognitive demands on the student group to be served, suggest such dual purpose courses are not likely to be successful.

Course Objectives

Upon successful completion of this course, the student should be able to

- use the Rule of Four (verbal, numeric, algebraic, and graphical representations) when required as well as choosing the best method when given a choice;
- demonstrate an understanding of the concepts related to functions and their inverses;
- identify and graph quadratic, polynomial, rational, exponential, and logarithmic functions as well as the conic sections; also, demonstrate knowledge of the properties of these functions and relations and apply this knowledge to real world situations;
- demonstrate proficiency in solving linear and non-linear systems using various algebraic, matrix, and graphical methods;
- graphically represent the solutions to inequalities and system of inequalities that involve two variables;
- use appropriate theorems and techniques to locate the roots of second and higher degree polynomial equations;
- use the notation and formulae associated with arithmetic and geometric sequences and series;
- demonstrate knowledge of binomial expansion and Pascal's triangle; and
- use technology appropriately in problem solving and in exploring and developing mathematical concepts.

Topical Outline

This course will cover the topics listed below, which are tied to the textbook. The times spent on each topic list the approximate amount of lecture time that will be spent on that topic. The time estimates do not include the midterm or final exams.

Items indicated with an asterisk * are covered through outside resources and assignments and will be covered as-needed in class lecture or using a just-in-time approach. These topics are not included in the time estimates.

Graphs, Functions, and Models – 2 hours

- * A review of graphing in the Cartesian coordinate system: points, lines, intercepts, midpoints, distance formula, circles, and parabolas
- Relations vs functions, graphing a function, vertical line test, domain and range, applied problems using functions
- Linear functions, finding and interpreting slope, slope-intercept form of a line, horizontal lines, vertical lines
- * Equations of lines, modeling, parallel and perpendicular lines, fitting regression lines and making estimations

- * Solving linear equations, applications of linear functions, and finding roots of linear functions
- * Solving linear inequalities including compound inequalities

More on Functions – 4 hours

- * Classifying intervals where a function is increasing, decreasing, and constant; finding relative extrema; graphing piecewise functions
- * Combining functions using sums, differences, products, and quotients; finding the difference quotient and relating it to slope of the secant line and average rate of change.
- Composition and decomposition of functions, stressing importance in Calculus
- Symmetry with respect to the x-axis, y-axis, and origin; even and odd functions
- Transformations of functions including shifts, stretches, and reflections. Practice quick sketching by transforming the basic functions: constant, linear, quadratic, cubic, square root, cube root, and absolute value

Quadratic Functions – incorporated into polynomial & rational functions *

- * Complex numbers, their conjugates, and calculations
- * Quadratic equations and solving by factoring, extracting roots, completing the square, and using the quadratic formula including hints for when each method is appropriate. Using the discriminant to identify the number and types of solutions. Substitutions to solve quadratic-like equations
- * Graphing quadratic functions, finding the vertex and axis of symmetry, placing into standard form by completing the square
- * Solving and graphing rational equations, solving radical equations including checking for extraneous solutions
- * Solving equations and inequalities with absolute value including the piecewise definition of absolute value

Polynomial Functions – 11 hours

- Leading-term test to determine end-point behavior, factoring polynomials to find zeros and multiplicities, graphing to find extrema, and fitting polynomials to data
- Graphing polynomials, maximum number of x-intercepts, maximum number of turns, intermediate value theorem
- Polynomial division, synthetic division, remainder theorem for evaluating a function and determining in the value is a zero
- Fundamental theorem of algebra, complex roots come in pairs for real coefficients, irrational roots come in pairs for rational coefficients, Rational root theorem for integer coefficients, Descartes' Rule of Signs.
- Sketching polynomial functions and determining equation from graph

- Polynomial inequalities, sign charts, speed charting (sign changes based on multiplicity of factors)

Rational Functions – 7 hours

- Rational functions: domain, range, asymptotes
- Sketching rational functions and determining equation from graph
- Rational inequalities, sign charts, speed charting (sign changes based on multiplicity of factors)

Exponential and Logarithmic Functions – 7 hours

- Inverse functions, one-to-one functions, horizontal line test, finding inverses, composition of functions with their inverses
- Exponential functions, the number e , graphs of exponential functions
- Finding common logarithms and natural logarithms with and without a calculator, contrast of logarithmic graphs with exponential graphs, converting between exponential and logarithmic equations, change of base formula
- Properties of logarithms including products, quotients, and powers. Combining multiple logarithms into a single logarithm. Expanding an individual logarithms into sums, products, and differences of multiple logarithms.
- Solving logarithmic and exponential functions
- * Applications of exponential and logarithmic functions

Systems of Equations and Matrices – 8 hours

- * Solving systems with two variables: substitution, addition/elimination, and graphing. Definitions of consistent, inconsistent, dependent, independent
- * Solving systems with three variables by elementary operations and systematic elimination to perform back-substitution
- Matrices and row-equivalent operations, Gaussian elimination and back-substitution with matrices, row-echelon form and reduced row-echelon form, Gauss-Jordan elimination without back-substitution
- Scalar multiplication; matrix addition, subtraction, multiplication, and equality; coefficient matrices and matrix equations
- Identity matrix; inverse of a 2×2 matrix, finding inverses using augmented matrix, matrix solutions to a system of equations
- Determinant of a 2×2 matrix, minors and cofactors, determinant of a square matrix, Cramer's rule
- Linear inequalities and systems of linear inequalities
- * Partial fraction decomposition, basic equation, undetermined coefficients, cover-up method

Conic Sections – 8 hours

- Parabolas: vertex, focus, axis of symmetry, directrix, standard form, completing the square, eccentricity, graphs, applications
- Circles: center, radius standard form. Ellipses: standard form, major axis, minor axis, vertices, foci, directrix, Pythagorean relationship, eccentricity, graphs, applications
- Hyperbola: standard form, center, transverse axis, conjugate axis, asymptotes, vertices, foci, directrix, Pythagorean relationship, eccentricity, graphs, applications
- Non-linear systems of equations and inequalities. General quadratic equation and identifying shape by inspection: circle, ellipse, hyperbola, parabola, point, no graph, intersecting lines, parallel lines, and line

Sequences, Series, and Combinatorics – 10 hours

- Sequences, infinite sequences, series, n-th partial sum, summation notation, recursion
- Arithmetic sequences: common difference, general term, sum of first n terms
- Geometric sequences and series: common ratio, general term, some of first n terms, sum of infinite series
- Mathematical induction
- Counting principle, factorials, permutations, combinations, binomial notation, distinguishable permutations
- Binomial expansion theorem with Pascal's Triangle and with combinations

Method of Evaluation

Evaluation could include any of the following: problem solving exams, objective exams, essays, research papers, oral presentations, group projects, individual projects, classroom engagement, classroom activities, quizzes, and homework.

Traditional Algebra Course

In the traditional algebra course, students are used to doing homework and taking exams. In this course, these two areas will not receive as much focus as you might expect.

The way you get good at something is by practicing it – ask anyone involved in sports. Homework is normally considered to be the mathematical equivalent of practice. However, while people involved in sports don't question the need for practice if they want to be great, students don't feel the need to be great in math, most just want to get out of the course.

Complicating matters is that student solutions manuals can easily be found on the internet and there are websites that provide worked out solutions to all of the problems in the textbook.

We have a situation the students that need the practice the most are those that are most likely to look for ways to get out of doing it, so it doesn't benefit them. The students who are at the

top of the their game don't see the need the practice, and feel they are wasting their time when they could be doing something else. This leads to even the best students being tempted to just copy the answers from somewhere. In either case, the instructor has no idea whether the student actually did the work themselves, had someone else do it for them, or just copied the answers from somewhere (students like to pull the "it's so easy I did it in my head" line when explaining why there is no work shown).

While almost every student could benefit from homework, few actually do from homework as it has traditionally been handled.

Instructors have long realized the diminishing role of homework, but continue to assign it because students need the practice and there's not an easy alternative. Some have moved from using homework as practice to do well on the exams to using homework as a buffer against poor exam scores.

The major problem with buffering the exams with the homework is that it places too much emphasis on the exam. End-of-unit exams encourage poor study habits in students. Students put off learning the material until right before the exam and then they promptly forget the material after taking the exam. This is not an effective way of learning material and is not conducive for long term comprehension and understanding.

Remember that College Algebra is a skills course and does not qualify as a general education course. Most of you will be taking another course that needs the material in the course and so we expect that you will take the concepts with you when you leave, not that you forgot them once the exam was over.

The reliance upon exams for the sole means of assessments places stress on those students who face test anxiety and perform poorly on exams. They know the material, they can demonstrate it in class, but for some reason freeze when you put an exam in front of them. For these students, their grade on the exams does not reflect their true level of understanding of the material.

Exams have their place and will be around for a long time in education, but there needs to be other forms of assessment as well.

Homework – 25%

We are not using an online homework system such as MyMathLab this semester. Instead, homework will be collected through Canvas. The homework and the due dates will be listed in Canvas.

After we finish a section, the homework for that section is due before the next class meeting. It will be accepted late for one additional class period, but there will be a 10% penalty in its value.

You should read through the sections before coming to class, but homework is not due until after the material is covered. The due date Homework is due on the date listed in Canvas.

The two lowest grades in the homework category will be dropped from the grade calculation.

Absolutely no late work will be accepted after the final.

Classroom Activities – 10%

Some of the assessment of learning will take place in the form of interactive classroom activities. These are often in the form of an online game like Kahoot! or a classroom response system like QuestionPress. These allow the instructor to get immediate feedback on each student's level of understanding and take steps to explain weaknesses – in the middle of the activity.

At other times, we will use peer instruction, where the class can benefit from working together to increase understanding of the concepts.

Because of the interactive nature of these activities, classroom activities cannot be made up if you miss them.

As there will occasionally be technical issues, a 10% discount applied to any classroom activity where the score is based on knowing the correct answer. For example, you may achieve 10 points, but it goes into the gradebook as being worth a possible 9 points. This also means that there is the chance to earn a few extra points.

Grades awarded for participation are not subject to the 10% discount.

There may be some other quizzes during the course that will be included in this category. They are not subject to the 10% discount unless they are conducted in class and are based on getting answers correct.

Students should read the material and attempt the problems before coming to class as some of the interactive quizzes will make the assumption that you have already familiarized yourself with the material.

The lowest scoring activity or quiz will be dropped from the gradebook.

Application Projects and Take Home Quizzes – 25%

There will be projects and take home quizzes during this course. Each week that does not have a major exam will have either an application project or a take home quiz. The assignment will be handed out at least two class periods before it is due and then collected on Thursday.

The take home quizzes will often cover review material and in some cases cover material that was not lectured on but can be found in the textbook if you need a refresher. They occur

during the first half of the course.

The application projects extend some of the applications of logarithmic functions, exponential functions, matrices, conic sections, and sequences. These occur in the last half of the course, so the projects will appear in the second half of the course.

The application projects and take home quizzes will be graded holistically using the awesome, good, okay, fair, poor, or none scale. Just giving an answer, even if it is correct, will not earn an awesome; you should show work.

You should begin the quiz or project as soon as you can, rather than waiting until it is due, so that you can ask questions if you have them. You are encouraged to help each other out, but not to do the work for them.

Application projects and take home quizzes will be available inside Canvas and become available the morning they will be handed out in class. You are welcome to download a copy from Canvas if you wish to get started on the material earlier than class. Answers to the projects and quizzes will be available inside Canvas after the assignment is collected.

Because the answers will be made available shortly after the assignment is due, application projects and take-home quizzes will not be accepted late. If you anticipate that you will be absent when an assignment is due, you can turn it in early.

Midterm Exam – 10%

There will be a midterm exam that covered in the first half of the semester. A study guide will be available prior to the exam.

This will be a traditional paper and pencil exam conducted inside the classroom. You should bring your calculator, although you should expect that portions of the exam will be worked without the use of a calculator.

Comprehensive Final Exam – 20%

There will be a comprehensive final exam focusing on the major concepts of the course. A study guide will be available prior to the exam.

The final exam occurs on the last day of class. There will be no additional class meetings after the final and no late work will be accepted after the final.

Graphical Explorations – 10%

Being able to use technology appropriately is important in this class. These graphical explorations are a series of documents that will have you using graphing technology to answer questions or emphasize important concepts from the course.

In some cases, they may be as simple as creating graphs and pasting them into a document. In other cases, you will need to come up with your own graphs and explanations.

The graphical explorations will be graded holistically using the awesome, good, okay, fair, poor, or none scale.

Graphical explorations may be turned in up to two (2) calendar days after they are due, but you will suffer a reduction in points for late work. Absolutely no late work will be accepted after the final exam.

Grading Policy

Letter grades will be assigned to final adjusted scores as follows:

A: 90–100% B: 80–89% C: 70–79% D: 60–69% F: below 60%

Final scores will be rounded to the nearest whole number, so a 79.5% will be considered a "B".

The overall score will be a weighted average of the following areas.

- 30% of your grade comes from a midterm exam and comprehensive final exam
- 25% of your grade comes from homework; two assignments will be dropped
- 25% of your grade comes from application projects and take home quizzes
- 10% of your grade comes from classroom activities; one assignment will be dropped
- 10% of your grade comes from graphical explorations

Holistic Grading System

Grades in a math course are typically assigned based on the percentage of the questions that you answer correctly. This works fairly well for objective exams where each question is assigned a point value and you are awarded points based on how well you answer each question. It does not work quite as well on subjective material worth a few points.

The instructor has tried rubrics where points are assigned for each little item. Students like it because they know exactly what needs to be done, but there's little lee-way or discretion on the instructor's part to reward excellent work. Students end up with low scores for leaving out part of the assignment that happened to be on the rubric, but don't benefit when they do something that was left off the rubric. Rubrics are typically set up so that you can get a maximum of 100% and you lose points for every little thing you do wrong, rather than rewarding you for doing things well. Canvas doesn't allow you to automatically deduct points for being late, so if you want to grade on timeliness, you need to have a rubric category for that, which reduces the points that you can give for the quality of the assignment.

To help counter some of the problems, the instructor has come up with a holistic rubric that looks at the complete product rather than assigning points for each individual question within

it. Doing exceptionally well in one area may make up for doing poorly in another. If you do an exceptional job, then you can actually score some bonus points.

The holistic grading system will be used on the graphical explorations, the application projects, and the take home quizzes.

Rating	Score	Description
Awesome	105%	Exceptional job that really impresses the teacher
Good	90%	Beyond what was required
Okay	75%	Satisfactory completion of requirements
Fair	60%	Almost there, but needs some development
Poor	45%	Minimal attempt at completing assignment
None	0%	Did not participate or nowhere close to assignment

There are just six levels and you are guaranteed a minimum of 45% if you turn even the slightest attempt at answering the problems. However, to get an A, you will need to consistently do good and occasionally do awesome.

Late and Missed Work

- Interactive classroom assessments cannot be made up. They do receive a 10% discount in their possible point value (a 10 point item gets recorded as being worth 9 points) and the assignment with the lowest grade will be dropped from the gradebook.
- Application Projects and Take Home Quizzes will not be accepted late as the answers will be made available in Canvas after the assignment is collected. You may turn them in early if you anticipate missing class when they are due.
- Graphical explorations may be turned in late, but doing so will probably adversely affect your grade on the assignment.
- The midterm and the final should be taken as scheduled. Contact the instructor with any concerns about the major exams.
- Absolutely no late work will be accepted after the final exam.

Gradebook

All grades will be entered into and maintained within the Canvas learning management system.

When you look at your grades in Canvas, there may be a + or - after the letter grade (example, B+ or C-). The plus or minus after the letter grade is informational and intended to be used as an encouragement or a warning that you might be able to move up or that you are in danger of slipping down. However, the final grades in the course will not contain a + or a -, just the letter grade, and an 80.1% is as much of a B as an 88.7% is.

Canvas has a What-If feature that allows you to play around with your grades. If you are

concerned about your grades, see the instructor.

Grade Changes

Scoring is subject to revision if mistakes are found in the grading. Your grade may increase or decrease when this happens. For this reason, you should strive to do better than the minimum needed.

The potential for some extra credit is already built into the system as the holistic approach used for the graphical explorations, application projects, and take home quizzes has an *Awesome* category that awards 105% of the possible points.

Do not expect that there will be other extra credit opportunities. If you desire a good grade, then you need to stay focused and perform consistently throughout the semester.

Attendance / Engagement Policy

This is a face-to-face class and attendance is important. We use Canvas, but it is to facilitate the classroom management, not to replace the material covered or instructions given. Turning in the assignments in Canvas does not count as attendance.

Attendance also means more than just being physically present in the room. It involves components of attendance, participation, engagement with others, paying attention, taking notes, and completion of assignments. It means not being distracted by your cell phone, the computer in front of you, or working on material for another course. It even means not working on quizzes or discussions for this course while the class is doing something else.

Attendance is recorded every class period as the percent of the class that where you were present and engaged. If you are physically there but not engaging in the class as described above, this may be recorded as absence.

If you miss the first day of class or any two consecutive days after that without communicating with the instructor, you may be dropped.

Regular attendance is essential for satisfactory completion of this course. Mathematics is a cumulative subject and each day builds on the previous day's material. If you have excessive absences, you cannot develop to your fullest potential in the course.

Students who, because of excessive absences, cannot complete the course successfully, are required to be administratively dropped from the class at midterm. If a student stops attending after midterm, it is the student's responsibility to withdraw to avoid an "F". Do not stop attending and assume that you will be withdrawn from the class by the instructor.

Although dropping students for non-attendance at midterm is required, students who have missed many classes or whose attendance is occasional or sporadic may be dropped from the

class at any point during the semester at the instructor's discretion. The safest way to make sure you're not dropped for non-attendance is to continue to attend classes.

The student is responsible for all assignments, changes in assignments, or other verbal information given in the class, whether in attendance or not.

If a student must miss class, send an email or Canvas message to the instructor. Please do not call and leave a voice message unless you are unable to send an electronic message, and then follow up with an electronic message when you are able or talk to the instructor during the next class session. When a test is going to be missed, the student should contact the instructor ahead of time if at all possible. Under certain circumstances, arrangements can be made to take the test before the scheduled time. If circumstances arise where arrangements cannot be made ahead of time, the instructor should be notified and a brief explanation of why given by either voice or email. This notification must occur before the next class period begins.

Time Requirements

In [34 CFR 600.2](#), the federal government requires that the amount of student work for a credit hour reasonably approximates not less than one hour of class and two hours of out-of-class work per week for each semester hour and that a 50 minute period is acceptable for class or lecture.

Richland considers the minimal meeting time as 50 minutes per week for 15 weeks for each credit hour. Since this course is a four credit hour course, that means $50 \times 15 \times 4 = 3,000$ minutes of class time. That is $3000 \div 60 = 50$ hours of class time.

There is to be a reasonable approximation of two hours of outside time for each hour inside class, so the 50 hours of classroom instruction needs 100 hours of outside work. In total, you should expect to spend a minimum of 150 hours this semester for this course.

This is a summer course and meets for 7.5 weeks, so that time requirement must be accomplished in a shorter period. Dividing the minimum of 150 hours by the 7.5 weeks gives us $150 \div 7.5 = 20$ hours per week outside of class that you should expect to spend on this course. Note that the 150 hours is a minimum, but that the 20 hours per week is an average.

You should expect to spend a minimum of 20 hours per week on this course.

Here are some other ways to look at that.

- There are 168 hours in a week and you're expected to put in a minimum of 150 hours for this course. Almost an entire week of your summer will be spent on this course.
- There are 24 hours in a day and you should spend a minimum of 20 hours per week working on this course. Almost one entire day of each week should be spent on this course.

If you are taking 8 credit hours in the summer, then you should expect to spend at least 40 hours a week on course work. That is the equivalent of a full-time job. The government does not intend that you work full time and be a full-time student; that being a full-time student is your full-time job.

According to the federal regulations, this target is a minimum, not an average.

Failure of the course to meet these time requirements could result in loss of program integrity, forcing the college to recover federal financial aid, and ultimately loss of accreditation.

At face value, it sounds overwhelming and impossible, but the time outside the class includes reading the book, watching videos, working on homework and projects, and participating in discussions.

The point is to manage your time effectively so that you don't feel the course is overwhelming.

Technology

The use of technology in this course is consistent with the Technology Statement in the [Illinois Mathematics & Computer Science Articulation Guide](#) (IMACC, 2016, p. 4). Technology is used to enhance the learning of College Algebra, but it is not the focus of the instruction. There will be instances when we will use the calculator or computer to aid in our understanding or remove some of the tediousness of the calculations (especially in the area of numerical approximations).

Here are some of the technology tools that we may use.

Graphing Calculator

This class is a mathematics class and a graphing calculator is required. A scientific calculator is not sufficient. The calculator should be capable of graphing functions, finding roots, maximums, and minimums from a graph, displaying tables of values, and finding the definite integral numerically. A Texas Instruments TI-84 or TI-83 is the recommended calculator.

Calculators may be used to do homework and may be used on exams and/or quizzes in class unless otherwise announced.

Maxima

Maxima is an open-source computer algebra system that is free for you to download and use at home. It is available from <http://maxima.sourceforge.net/>

WinPlot

WinPlot is a free graphing software package for Windows written by the late Rick Parris at Phillips Exeter Academy in Exeter, New Hampshire. The software is useful for creating graphs

and it is easy to copy/paste the graphs into other applications. Exeter Academy maintained the server with the software for about 4 years after Parris' death, but the site is no longer available. To download the software, visit the instructor's Mathematical Software page at <https://people.richland.edu/james/software>

Additional Supplies

The student should bring a pencil, paper, and calculator to class each day. You may occasionally want a ruler or graph paper. There will be a paper punch and stapler in the classroom.

Additional Help

The student is encouraged to seek additional help when the material is not comprehended. Mathematics is a cumulative subject; therefore, getting behind is a very difficult situation for the student. There are several places where you can seek additional help in your classes.

You may use a recording device to record the lectures. Feel free to use a camera or cell phone to take pictures of the boards if you have trouble getting all of the information into your notes.

Instructor

I try to make myself as available to the students as I can. My office hours are listed at the beginning of this syllabus, but those are just the times I'm scheduled to be in my office. Grab me and ask me questions if you see me in the hallway. Ask questions before or after class. If I'm in my office and it's not my scheduled office hours, go ahead and stop in.

The instructor should be considered the authoritative source for material related to this class. If a tutor or other student says something that disagrees with the instructor, believe the instructor.

Study Groups

Probably the best thing you can do for outside help is to form a study group with other students in your class. Work with those students and hold them accountable. You will understand things much better if you explain it to someone else and study groups will also keep you focused, involved, and current in the course.

Mathematics Enrichment Center

The Mathematics Enrichment Center, located in W117, provides free walk-in tutoring for mathematics courses. There are additional locations available at the Clinton and Fairview extension centers.

Academic Success Center

The Academic Success Center consolidates several student services into one area. It is located in the south wing of the first floor next to the Kitty Lindsay Learning Resources Center (library).

Testing

The testing center is located in room N114. You must provide a photo identification and know the name of your instructor to use this service.

Tutoring

The tutoring center provides tutoring on a walk-in or appointment basis in room C148. Students seeking mathematics tutoring should visit the Mathematics Enrichment Center.

Accommodations

There are accommodations available for students who need extended time on tests, note takers, readers, adaptive computer equipment, braille, enlarged print, accessible seating, sign language interpreters, books on tape, taped classroom lectures, writers, or tutoring. If you need one of these services, then you should see Learning Accommodation Services in room C148. If you request an accommodation, you will be required to provide documentation that you need that accommodation.

Online Learning

Despite the title, Online Learning provides help with much more than just your online courses. They provide technical support for students including answering questions about Canvas, myRichland, e-mail, cell phones, tablets, and laptops. They can also help troubleshoot your computer issues and make sure your computer is ready for course work.

They are located in room W143, but the best way to contact them is through the "Help" link in the lower-left corner of Canvas or at <http://www.richland.edu/online/helpdesk>.

Open Computer Labs

Students often wish to know where, besides the classroom, they can go to use the software. There are computers located in the Learning Resources Center and in the Academic Success Center that you may use.

College & Division Policies

Academic Dishonesty Policy

Each student is expected to be honest in his/her class work or in the submission of information to the College. Richland regards dishonesty in classroom and laboratories, on assignments and examinations, and the submission of false and misleading information to the College as a serious offense.

A student who cheats, plagiarizes, or furnishes false, misleading information to the College is subject to disciplinary action up to and including failure of a class or suspension/expulsion from the College.

Non-Discrimination Policy

Richland Community College policy prohibits discrimination on the basis of race, color, religion, sex, marital or parental status, national origin or ancestry, age, mental or physical disability (except where it is a bonafide occupational qualification), sexual orientation, military status, status as a disabled or Vietnam-era veteran.

Electronic Communication Devices Policy

The Mathematics and Sciences Division prohibits the use of cell phones, pagers, and other non-learning electronic communication equipment within the classroom. All equipment must be turned off to avoid disturbances to the learning environment. If a student uses these devices during an examination, quiz, or any graded activity, the instructor reserves the right to issue no credit for these assignments. The instructor needs to approve any exceptions to this policy.

Other College Services

There are some additional services that Richland provides to its students. While they may not directly pertain to this class, you may benefit from them.

Learning Feedback System

At the end of each semester, students are invited to provide feedback to their instructors about the course. This includes things that went well and opportunities for improvement. This online feedback is anonymous and the instructor won't see it until grades have been turned in.

The Learning Feedback System (LFS) is primarily intended to provide feedback to the instructor. However, if you have a issues or concerns, you should not wait until the end of the semester to talk to your instructor. Please come to me at any time. The feedback system is available at <https://people.richland.edu/feedback>.

myRichland

myRichland is the student information system portal and is located at <https://my.richland.edu>.

You may use it to find the course schedule, register for classes, check your grades, obtain unofficial transcripts, review financial aid, and other student services.

Library

The Learning Resources Center (LRC) has print and electronic resources available. They offer research assistance and information literacy sessions; they also have individual and group study areas.

Student Success Center

The Student Success Center is designed to be a one-stop shop for most student services. These include advising and registration, career services, counseling services, financial aid, veteran affairs, student records, and the transfer center.

A few other student services are located in other rooms of the main building. These include Campus Life, which supports new student orientation, clubs, organizations, and student leadership, and the TRiO program that offers academic and personal support to first-generation, low-income, and students with disabilities.

Directory of Student Services

The main phone number for Richland Community College is 217-875-7211 or 217-875-7200. This is an automated system available 24 hours a day.

Student Service	Location	Extension
Accommodations	C148	6379
Advising and Registration	N116	6267
Campus Life	C131	6243
Career Services	N103	6305
Counseling Services	N117	6267
Financial Aid	N117	6274
Library	C152	6303
Online Learning Support	W143	6376
Mathematics Enrichment Center	W117	6383
Student Employment	N103	6305
Student Records	N117	6257
Student Support Services/TRiO Program	C143	6440
Testing	N114	6238
Transfer Center	N117	6438
Tutoring	C148	6379
Veteran Services	N118	6205

Richland Cross-Disciplinary Outcomes

The course objectives listed in this document make reference to these items.

1. The degree-seeking student will be able to communicate effectively (read, write, speak and listen).
2. The degree-seeking student will think critically and creatively.
3. The degree-seeking student will act professionally and responsibly.
4. The degree-seeking student will manage technology and evaluate information in various research and applied contexts.