Math 121 – Calculus & Analytic Geometry I
Fall 2015 Course Syllabus

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

Course Meeting Information

The Fall 2015 semester begins August 17, 2015, and concludes December 14, 2015.

MATH 121-01 meets from 1:15 to 2:40 pm on Monday, Wednesday, and Friday in room S137.

The WebAssign (https://www.webassign.net) class key for this course is: richland 9400 6782

Instructor Information

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Office Hours

I spend most of my office hours in the classroom, room S137. This allows me to help students with their assignments, homework, projects, exams, and questions.

- Monday: 9:00-9:30 am, 10:45-10:55 am, 12:50-1:15 pm, 2:45-2:55 pm, 4:15-4:30 pm
- Wednesday: 9:00-9:30 am, 10:45-10:55 am, 12:50-1:15 pm, 2:45-2:55 pm, 4:15-4:30 pm
- Friday: 9:00-9:30 am, 10:45-10:55 am, 12:50-1:15 pm, 2:45-2:55 pm

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

There is a textbook and an electronic homework package required for this course. The electronic package also includes an electronic version of the textbook and you do not have to buy a printed textbook if you want to go completely electronic.

- *Essential Calculus: Early Transcendentals, 2nd edition.* James Stewart. Copyright 2013, Brooks/Cole Cengage Learning. ISBN-13 978-1-133-11228-0 (Required textbook, but printed version is optional)
- *Enhanced WebAssign Homework and eBook LOE Instant Access for Multi Term Math and Science, 1st Edition.* ISBN13: 978-1-285-18421-0 (Required – can also be purchased within WebAssign)

The two items above can be bundled together for cost savings.

- *ePack: Essential Calculus: Early Transcendentals, 2nd + Enhanced WebAssign Homework and eBook*

Student Audience

Transfer students. Students pursuing degrees in engineering, mathematics, computer science, natural sciences, and life sciences.

Prerequisite

Successful completion (C or better grade) of Math 116, College Algebra, and Math 117, Trigonometry, or satisfactory score on the Mathematics placement exam.

Course Description

MATH 121 - Calculus & Analytic Geometry I
Hours: 5 lecture - 0 lab - 5 credit

MATH 121 is the first course in the single variable calculus series intended for students going into areas of science, technology, engineering, or mathematics. The course begins with a review of algebra and trigonometry followed by the introduction of limits and continuity. Derivatives of elementary, transcendental, and inverse functions are covered with their applications including L'Hôpital's rule. The course ends with integrals of elementary functions. Because the order of the topics covered in the calculus series varies by institution, it is recommended that a student needing Calculus 1 and Calculus 2 complete both of them at the same institution.

Applicable toward graduation where program structure permits.

- Certificate or degree: All certificates and all degrees.
- Group requirement: Mathematics
- Area of Concentration: Mathematics.

Illinois Articulation Initiative (IAI)

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 121, Calculus & Analytic Geometry I, satisfies the Illinois Articulation Initiative Definition of a General Education Mathematics Course. It corresponds to M1 900-1, College-level Calculus I.*

M1 900-1: College-level Calculus I (4-5 semester credits)

Topics include (but are not limited to) the following: limits and continuity; definition of derivative: rate of change, slope; derivatives of polynomial and rational functions; the chain rule; implicit differentials; approximation by differentials; higher order derivatives; Rolle's Theorem: mean value theorem; applications of the derivative; anti-derivative; the definite integral; the fundamental theorem of calculus; area, volume, other applications of the integral; the calculus of the trigonometric functions; logarithmic and exponential functions; techniques of integration, including numerical methods; indeterminate forms: L'Hôpital's rule; improper integrals; sequences and series, convergence tests, Taylor series; functions of more than one variable, partial derivatives; the differential, directional derivatives, gradients; double and triple integrals: evaluation and applications. Prerequisite for Calculus I: College Algebra and Trigonometry with grades of C or better or Elementary Functions with a grade of C or better.

> *When three courses are required to convey the necessary skills in calculus to mathematics majors, it is highly advised that students complete the entire sequence at a single institution. Course content may vary widely among institutions depending on the credits assigned to each course, and completing the sequence at a single institution is the best way to assure that neither credit nor content is lost in transfer.*

The IAI description for Calculus involves all three semesters since some schools cover the sequence in a different order. The portion of the Calculus sequence that is covered in Richland's Calculus 1 is highlighted in red.

For more information on the Illinois Articulation Initiative, visit their website at
http://www.itransfer.org/

General Course Objectives

A topical outline of the content covered in the course follows this section. While learning calculus is certainly one of the goals of this course, it is not the only objective. Upon completion of this course, the student should be able to:

- demonstrate comprehension and understanding in the topics of the course through symbolic, numeric, and graphic methods.[1, 2, 3]
- demonstrate the use of proper mathematical notation.[1]
- use technology when appropriate and know the limitations of technology.[2,3]
- work with others towards the completion of a common goal.[1,4]
- use deductive reasoning and critical thinking to solve problems.[2]
- apply common sense to mathematical problems.[2]
- effectively communicate the student's understanding of the subject.[1,3]

The numbered superscripts refer to the Richland Cross-Disciplinary Outcomes addressed by that objective. A copy of the Cross-Disciplinary Outcomes can be found at the end of this syllabus.

Topical Outline

The following topical outline is an estimate of how much time will be spent on each topic and is aligned with the chapters in the textbook.

Review of Algebra and Trigonometry – 6 hours

- Diagnostic Tests for Algebra, Analytic Geometry, Functions, and Trigonometry
- Review of Algebra
- Review of Analytic Geometry
- Review of Trigonometry

Functions and Limits – 16 hours

- Functions and Their Representations
- A Catalog of Essential Functions
- The Limit of a Function
- Calculating Limits
- Continuity
- Limits Involving Infinity

Derivatives – 15 hours

- Derivatives and Rates of Change
- The Derivative as a Function
- Basic Differentiation Formulas

- The Product and Quotient Rules
- The Chain Rule
- Implicit Differentiation
- Related Rates
- Linear Approximations and Differentials

Inverse Functions, Exponential, Logarithmic, and Inverse Trigonometric Functions – 12 hours

- Exponential Functions
- Inverse Functions and Logarithms
- Derivatives of Logarithmic and Exponential Functions
- Exponential Growth and Decay
- Inverse Trigonometric Functions
- Hyperbolic Functions
- Indeterminate Forms and L'Hospital's Rule

Applications of Differentiation – 14 hours

- Maximum and Minimum Values
- The Mean Value Theorem
- Derivatives and the Shapes of Graphs
- Curve Sketching
- Optimization Problems
- Newton's Method
- Antiderivatives

Integrals – 10 hours

- Areas and Distances
- The Definite Integral
- Evaluating Definite Integrals
- The Fundamental Theorem of Calculus
- The Substitution Rule

Type of Instruction

Learning will occur via discussion, problem solving, student questions, student participation, group work, oral presentations, and/or lecture. Students are expected to read the material before coming to class and are strongly encouraged to come to class with a list of questions and to ask these questions.

Method of Evaluation

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

The final weighting of grades will be decided upon by the class, subject to the following guidelines:

- No more than 15% of your grade may come from WebAssign prelecture questions.
- No more than 15% of your grade may come from reading quizzes.
- At least 20% of your grade must come from either WebAssign prelecture questions or reading quizzes.
- No more than 20% of your grade may come from WebAssign section quizzes.
- No more than 15% of your grade may come from technology projects.
- No more than 15% of your grade may come from classroom engagement.
- At least 40% of the grade must be from the chapter exams.

WebAssign Prelecture Assignments

WebAssign is a software package that is designed to be a homework and testing framework. It also provides access to an electronic version of the textbook.

For each section in the textbook, there is an accompanying prelecture assignment in WebAssign. As the name indicates, these are a few problems (4-10 problems) to make sure that you're ready for the material in the section. They are designed to take approximately 30 minutes per section. These are identified with the word "Prelecture" in the assignment title.

These prelecture assignments should be worked out before we cover the section in class.

Each prelecture assignment will be weighted equally, no matter how many questions are asked in the assignment. There are no extensions allowed on prelecture assignments, but the three (3) prelecture assignments with the lowest percentage scores will be dropped to help compensate for issues that might arise.

Work your problems out on paper and turn the paper in for the instructor to look at. The work that you turn in should be legible, organized with each problem clearly identified. It should contain actual work, not just an answer. In some cases, the answer is simply yes/no, true/false, or picking one of four graphs. In these cases, your work should be an explanation of why you chose the answer you picked. Failure to show adequate work may result in a loss of engagement points.

WebAssign Section Quizzes

In addition to the prelecture assignments, WebAssign has a quiz over each section.

For each section in the textbook, there is an accompanying quiz in WebAssign. Each quiz has roughly

5-10 less computationally-involved questions that are designed to ensure you master the material in the section. They are designed to take approximately 15-30 minutes per section. These are identified with the word "Quiz" in the assignment title.

Each quiz should be completed before we begin the next section or take an exam over the material. You are allowed three (3) submissions and can submit parts of questions rather than waiting until the entire quiz is complete. You may also save your answers and continue later without using one of your submissions.

At the end of the three (3) submissions, your quiz is over. There is not an option to retake the quiz and improve the score after you have used your three attempts. WebAssign will keep your best score on the quiz.

> *In previous semesters, the WebAssign Personalized Study Plan was used. This allowed students an unlimited number of attempts and some students would submit the assignment 3 times without answering to get the solution and see how to work the problem. Attempting to do that this semester will result in a 0 for those unanswered questions. The quizzes through the Personalized Study Plan required that you submit the entire quiz and it would only take the last score, which may not be your best score. This semester, your best score is used, but you only get three attempts at the quiz.*

To help encourage effective time management and discourage procrastination, if you submit your answers more than 18 hours before they are due, you will receive a 10% bonus for correct answers.

If you do need a time extension on section quiz, you may request an extension. Extension requests are automatically granted, so you do not need to explain why you need the extension. Each extension request gives you one additional day (from the time of the extension) to work on the quiz. Each request also imposes a 20% penalty on the unearned portion of the quiz, so don't request an extension until you have time to work on the material. You may request up to three (3) extensions per section but you must use them within 14 days of the original due date and time.

For example: There is a 10 point quiz and you correctly answered 6 points before it was due. You want to go back before the exam and re-learn the material you missed. You ask for an extension, which is granted. Within the next 24 hours, you answer 3 of the remaining 4 points correctly. Your final grade for that quiz will be 6 + 0.80(3) = 8.4 points. If the end of the semester comes around and you're desperately seeking ways to increase your points, you can only go back to assigments within the last 14 days to recover lost points.

Extensions extend the time you have to answer a question, not the number of attempts that you are given. Once you use your three (3) attempts at a question part, no additional attempts will be given.

Each section's quiz will be weighted equally, no matter how many questions are asked in the quiz. There are no extensions allowed on the quizzes, but the three (3) quizzes with the lowest percentage

scores will be dropped to help compensate for issues that might arise.

If your average for all of the WebAssign Section Quizzes within a chapter is at least 80%, then you will be eligible to participate in a collaborative (group) chapter exam. If you do not obtain an average of at least 80%, then you will not be allowed to participate in a group when taking the exam.

Reading Quizzes

You are expected to read through the material in a section before coming to class. You do not have to understand all of it, but there should be a basic level of familiarity before class because a large portion of class time will be spent working on conceptual understanding, not basic skills.

These quizzes are mainly designed to encourage reading of the material before the section is covered in class. The questions are picked so that a student with a medium level of understanding of the section should be able to answer them.

These are typically given at the beginning of class when we start a new section and cannot be made up if you are not present. Not every section will have a quiz and sometimes we may skip planned quizzes because of time constraints. Because the number of quizzes is not pre-determined, the instructor will drop 15% of the quizzes (rounded to the nearest whole number) from the gradebook to allow for absences, bad days, life emergencies, etc.

Group Activities

Much of the learning in the classroom is done using collaborative learning and group projects. The majority of the sections will have an activity sheet designed to help you learn and more deeply understand the material than the traditional homework problems. At times, everyone will go to the board to work a problem in small groups so that I can see how you're doing.

These activities are instructional and not a direct part of your grade. The goal is to get everyone to know the material before it is over, not see how many know the material before it starts.

However, I will be observing the group dynamics during these activities to see who participates, who leads, who contributes, and who just lets the others do the work. This is related to the classroom participation portion of the grade.

Technology Projects

The appropriate use of technology is becoming more and more important. This class strives to reach a balance between conceptual understanding, memorization, hand calculations, and the use of technology.

Towards that end, there is a project for each chapter that will involve the use of technology. It may be as simple as taking some problems and learning how they can be done on the computer so you learn how to use the software. In other cases it involves taking more complicated problems using

real-life data and ugly answers that don't work out nice when you do them by hand.

These projects are group projects and are due the day of the exam. Group assignments will be close to the beginning of the chapter based on students in attendance at that time.

In many cases, material on the exam may relate to concepts learned on the technology projects. For this reason, each student should understand all of the problems on the technology projects. The temptation in group projects like this is to divide the project and assign each member a portion to complete. While this may seem like a good idea, it will hurt you when it comes to the exam as each student needs to know all of the material contained in the projects, not just 1/3 of the material.

Classroom Engagement

Some students do better at showing their level of understanding than performing on an exam. When asked a question during class, those students can provide an oral answer and explain the concepts, but put a piece of paper in front of them, call it an exam, and they leave it blank.

In the past, classroom participation has been an informal portion of the grade. Students who were borderline and just shy of the next higher grade might have their grades bumped up if they actively participated in class and demonstrated to the instructor that they understood the material more than their exam scores reflected. On the other hand, students who showed little involvement in the class or demonstrated little knowledge during class were not likely to get the boost. Participation was never a specific percent of the grade, it was something done in the background at the end of the semester.

In this course, we're allowing for other methods, besides just performance on an exam, to show that you comprehend the material, and classroom involvement could be one of those ways.

This goes much deeper than just answering questions as that tends to favor the extroverts, whether or not they are correct in their answering. It involves allowing others the chance to answer or struggle and then helping them. Here are some ways to demonstrate classroom engagement, there may be others:

- Demonstrate understanding by giving correct answers or sharing insights.
- Create a positive learning environment. Don't cause distractions for those who want to learn by talking, giggling, watching videos, sleeping during class, or otherwise being disengaged.
- Attend regularly and be actively engaged in the class when present.
- Contribute to group activities instead of letting other people do all the work and you taking credit. Show leadership in the groups.
- Participate fully in class while allowing the rest of the class to also participate (don't monopolize)
- Help other students learn and understand material, in your own group and in other groups.
- Take on the role of coach or mentor to other students. Serve as a resource on topics.
- Submit homework that demonstrates a substantial understanding of the process, not just

answers to the questions.

By its nature, this section is subjective. There are not hard criteria (e.g., you must answer questions four times to get an "A") involved and there are times that you will do something that goes unnoticed by the instructor.

The instructor is looking for an overall pattern of continued and full classroom engagement.

Chapter Exams

The in-class exams in this course generally have limited numbers of basic skills questions on them. There is very little straight-forward "differentiate this" or "integrate this" type problems. That has been pushed off onto the WebAssign portion of your grade.

What you will find on the in-class exams are a few problems that get at how deeply you *understand* the concepts rather than a lot of problems that assess how well you have memorized how to work a particular type of question. The questions will often be similar to ones encountered in the group activities or on the technology projects, or they might be items you've never seen before but you should be able to figure out with the information you have seen.

Absolutely no late work will be accepted after the final exam, so the last in-class exam must be taken as scheduled with the rest of the class.

Collaborative Exams

Much of the learning that takes place inside the classroom will be in a collaborative or group environment. Traditionally, exams have been individual tasks, so that the student can differentiate themselves from the group and showcase their abilities. A question that often arises, sometimes seriously and sometimes not, is "If we do our work in groups, why can't we take our tests in groups?" or "If you think group work is so important, why can't we take our tests in groups?"

To answer that, we need to look at the purpose of a test and the goal of allowing collaborative exams.

- An exam should provide the student an opportunity to demonstrate their competency in the material.
- Tests should be a learning tool, not just an assessment device.
- In collaborative work, the stronger students should help bring up the weaker students, but all members of the team need to contribute.

This semester, we're going to try collaborative exams and see how well they work out. Here are some of the issues with group tests.

- If students self-select groups, the A students get together and the C students get together so it's no better than having individual tests.
- If the teacher assigns stronger students to work with weaker students, then the weak students

sponge off the better students. Any method of group assignment based on ability essentially identifies how a student is doing in the class. This could result in a violation of the Family Educational Rights and Privacy Act (FERPA), which prohibits public disclosure of grades in a personally identifiable manner.

- If you work collaboratively on the entire exam, then you have no way of assessing individual performance. Eventually, there has to be some measure of an individual student's capabilities for assigning grades.

- If you have an individual portion and a group portion and average them, the better students might actually end up doing worse than they would have individually. Some could argue that's a good thing because they didn't help bring the weaker student up when they knew better. Others feel it would discourage better students from working in groups and thus remove any benefit of group tests.

Basically, any valid assignment needs to be random.

Here are guidelines to help minimize the concerns and issues while accomplishing the goals of testing.

- You do not have to work in a group, you may take the test as an individual. Students taking the exam individually do not get a second attempt at the exam.

- Group collaboration on exams is available only to those students who are taking the exam in class on the scheduled day. If you are taking your test in the testing center, this option is not available to you.

- Groups will be randomly assigned on test day among students who are taking the test in class and wish to participate in a group. Groups will have 2 or 3 students in them. You may not, after learning who your group is, decide you don't want to work in groups. No one will be forced to work in a group; if there is only one student in the class who wants to work in a group, that person will end up working alone.

- If there are three members in a group and the third member is taking a long time while the other two are waiting, it may be possible for the two to start without the third member. If the two complete a substantial portion of the group test before the third person finishes, then the third person essentially has chosen to work alone and will not benefit from the group effort.

- Each person will individually first take and turn in the exam. Then you will work collectively as a group and complete the exam. The group test will probably be the same questions as the individual test, but with different numbers.

- If you score less than 50% on the individual portion, that is your grade for the exam, you receive no point benefit from the group portion, although you still benefit from the collaboration and hearing the explanations from the group so you hopefully learn what you did wrong.

- The average of the scores for all individuals in the group who scored at least 50% will be computed. If the group score is higher than the individual average, the difference will be added to each score. If the group score is lower than the individual average, you keep your individual

scores.

- All students who work in groups recognize that their individual scores may be discovered by the other students in their group and consent to this stipulation. The instructor will not disclose individual scores, but since this is a mathematical computation, it may be possible to solve for the missing scores.

Example: John, Tom, and Bob are in a group. On the individual portion, John scores 78, Tom scores 45, and Bob scores 62. On the group portion of the exam, they collectively score 75. John and Bob scored at least 50%, so the average of their individual scores is (78+62)/2 = 70. The group score of 75 is 5 points higher than the average of 70 of the individual scores, so John and Bob both get an additional 5 points on the test. The final scores on the exam are 83 for John, 45 for Tom, and 67 for Bob.

Option 1: Take exam in class at scheduled time with option to collaborate

If the average of all of the WebAssign Section Quizzes for a chapter is at least 80%, then you may participate in a group when you take that chapter's exam.

If your average of the WebAssign Section Quizzes for a chapter is not at least 80%, then you will not be able to work in a group on the chapter exam.

Note that the WebAssign section quizzes are due by the beginning of the next class period after we finish covering the section. This means that you will not be able to procrastinate until the end of a chapter and try to catch up on everything the night before the exam and be able to work in groups.

The specific details of how the group exam will work are given above.

Option 2: Take exam in Testing Center without collaboration

Many students are procrastinators; they do not study until the night before the exam or start to work on assignments until they are due. This is a bad way to study as you need time to learn the material deeply and fully. In turn, the scores on the exams aren't what the student or the instructor feels the student is capable of obtaining.

The way this situation normally plays out is that the student is ill-prepared for the exam and faced with two choices: 1) take the exam and do poorly, or 2) feign illness [unless you're actually sick from staying up all night studying] and hope the instructor will give you an extension. The first case is undesirable and the second case doesn't usually lead to better scores because a student who is unprepared on test day is still unprepared when they take the test and then they fall behind in the new material being covered.

If, for whatever reason, you feel that you are not ready to complete the exam with the rest of the class on the day it is scheduled, then the instructor will place your exam in the testing center and you will have until the start of the 2nd class period after the scheduled exam to complete the test. That is, you are allowed one class meeting after the scheduled date, but you must have it completed before

the second class meeting after the scheduled date begins. Failure to complete the exam before the beginning of the second class period will result in a zero for the grade

That paragraph is a little confusing, so here are some examples. All assume that the class meets Monday, Wednesday, and Friday:

- A test is scheduled for Friday. The next class meeting is on Monday and you have until the start of Wednesday's class to complete the exam.
- A test is scheduled for Monday, but there the college is closed on Wednesday. Friday's class would be the first one after the exam and so you must have it completed by the following Monday's class begins.

This two-class limit is so that other students in the class start won't suffer from not getting their tests back in a timely fashion. It is also to keep you from falling further behind in the class.

If you take the exam in the testing center, there will be no opportunity for group work.

Absolutely no late work will be accepted after the final exam, so the last in-class exam must be taken as scheduled with the rest of the class.

Note that the testing center is not open on Sundays, holidays, or days when there are no classes. You will need to bring a photo identification with you when you come to take the 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%

Standard rounding rules apply, so an 89.5% will be considered an "A".

Consideration may be given to such qualities as attendance, class participation, attentiveness, attitude in class, and cooperation to produce the maximum learning situation for everyone.

The gradebook for the course will be kept inside WebAssign. When you look at your grades in WebAssign, 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.

Assignments are due at the beginning of the class period on the date they are due. The instructor may be gracious and allow you to turn them in later that day without counting them late, but do not count on his graciousness.

Late Work

This is a summary of information found in other parts of the syllabus. For more information, look in those sections.

- WebAssign Prelecture Assignments are due before the start of class when we start a new section and will not be accepted late. The goal is to for you to be prepared to learn when you come to class and so working on the prelecture after the class meets defeats that purpose. The lowest three (3) of the prelecture assignments will be thrown out.
- WebAssign Section Quizzes are due before the start of the next class period after we finish a section. You may ask for up to three (3) one-day extensions to complete questions you were not able to get completed before the due date. Each one-day extension request will cost you 20% of the points unearned points. The extension requests must be made within two weeks (14 days) of when the assignment was originally due. Because the late penalty is per 24-hour extension and not per day late, be sure you make sure you have time to work on the quiz before requesting an extension. The lowest three (3) of the section quizzes will be thrown out.
- Reading Quizzes are interactive and in-class. They may not be made up and will not be accepted late. 15% of the reading quizzes will be thrown out.
- Group Activities are not graded, but they serve as inspiration for questions on the exam. If you miss a group activity, be sure to get a copy of the activity from someone and make sure you understand it.
- Technology Assignments are due at the beginning of class on the day of the exam. They may be turned in late, but they lose 20% of their value per class period.
- Classroom Engagement is a grade for based on classroom attendance, involvement, participation, contribution, etc., rather than a specific assignment. The concept of late or make-up work does not apply to classroom engagement.
- Chapter Exams will be placed in the testing center for anyone missing the scheduled day of the exam. You have until the start of the second class period after the scheduled exam to complete the test. If you complete it before the start of the second class period following the exam, then there is no penalty for being late. If you fail to complete the exam before the start of the second class period following the exam, then you will get a zero (0) for the exam.

If I've missed anything in the list above, then the following guidelines will apply. Grades obtained in an interactive method may not be made up. Other grades may be turned in late until such time as they are acted upon or the answers are given. In the case that late work is accepted, late assignments lose 20% of their value per class period.

Absolutely no late work will be accepted after the final.

Attendance Policy

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 whose attendance is occasional or sporadic may be dropped from the class at any point during the semester at the instructor's discretion. If you miss the first day of class or any two consecutive days after that without communicating with the instructor, you may be dropped. 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, the student should notify the instructor by email. In extreme circumstances, you can leave a voice message, but I generally will not get those in a timely fashion. If you do leave a voice message, be sure to follow up with an email.

If you are going to miss an exam, you may choose to take it early. However, if you do not show up on the day of an exam, then I will automatically place your test in the testing center and then you have until the start of the second class period after the scheduled exam to make it up. You do not need to contact the instructor for this to happen. However, if you know that you are going to miss an exam and the days following the exam, then you will definitely want to talk to the instructor to take the exam early.

Homework

Attempting and completing homework is vital to your success in this course. Homework is the practice that strengthens your skills and prepares you to learn the material. Some students will need lots of practice and some students will only need to hone their skills.

The Enhanced WebAssign package that we are using allows you to try homework online, immediately see if you have the right answer, get help, and practice a similar problem if you want. Some students like the online version, other students don't work well behind a computer and prefer paper and pencil.

Regardless of how practice problems, it is imperative that you practice. That said, homework will not be part of the grade in this course. Instead, it will help you master the skills needed to learn the

material and perform well on the exams.

As calculus students, you are some of the best and brightest mathematics students we have and you have some algebraic and trigonometric skills that most students are lacking. You should voluntarily do as much homework as you need to master the material. In this class, you will be given a list of suggested problems. If you find that you are understanding the concepts, this may be enough for you, but if you find that you still don't understand the material after working those problems, it may be necessary for you to work additional problems.

Technology

The use of technology in this course is consistent with the Technology Statement in the *Illinois Mathematics & Computer Science Articulation Guide* (IMACC, 2013, p. 4). Technology is used to enhance the learning of Calculus, 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). There may be some projects, homework, or portions of a test that require you to use technology to complete.

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

WebAssign

WebAssign is an online homework and grading system. Stewart's Calculus text is available in WebAssign as an enhanced electronic version. The full text of the book is there as well as tutorials, videos, and explorations. WebAssign is available at https://www.webassign.net/

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. That said, a TI-92, TI-89, or TI Nspire CAS calculator is recommended for this course if you plan on taking additional calculus or engineering courses.

You may use a graphing calculator from another company like Casio, but you will be responsible for figuring out how to use it.

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

Microsoft Excel

This spreadsheet application is useful for numerical methods such as the Trapzoid Rule, Simpson's Rule, and Euler's Method. It is loaded on all of the student computers at Richland.

Maxima

Maxima is an open-source computer algebra system that is free for you to download and use at home. It is available at 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 NH. The software is useful for creating graphs and it is easy to copy/paste the graphs into other applications. You may download the software by right-clicking your mouse on the word "WinPlot" at the top of the page http://math.exeter.edu/rparris/winplot.html and choosing save.

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 S116. 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 S118. 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 upper-right 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

Temporarily located in the Workforce Development Institute (WDI) building, 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.

There are a few other student services that are still in 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. This is an automated system available 24 hours a day. If you would like to speak to an operator, then call 217-875-7200 during normal business hours.

Student Service	Location	Extension
Accommodations	C148	379
Advising and Registration	WDI	267
Campus Life	C131	243
Career Services	WDI	305, 243
Counseling Services	WDI	252
Financial Aid and Veteran Affairs	WDI	274
Library	C152	303
Online Learning Support	W143	376
Mathematics Enrichment Center	W117	383
Student Employment	WDI	205
Student Records	WDI	257
Student Support Services/TRiO Program	C143	440
Testing	S116	238
Transfer Center	WDI	222
Tutoring	S118	419
Veteran Services	WDI	307, 205

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.