Grading Policies for MAT 115: Precalculus

This class will make use of a Standards Based Grading (SBG) system. In recent years, SBG systems have been implemented in many classrooms across the country and extensively studied. The main goals of the implementation of this course are the following:

1) Lower overall student stress and reduce test anxiety.
2) Give assignments that focus on student progress and reduce cognitive workload for the student by giving more assessments over less material.
3) Make the grading system as fair and transparent as possible and less dependent on random chance.

You can view the sources at the end of this document if you are curious as to the research supporting SBG systems.

Overview

The basic idea of the system is that there is a list of learning goals and techniques or "standards" that a successful student in a precalculus course should understand and be able to perform. Throughout the semester you will be quizzed on these standards. You have multiple chances to retake a quiz over any given standard and redo homework problems until you pass (up to certain stipulations outlined below). Grades are then assigned using a "bundle" system that relies on how many standards you passed and how much of the homework you completed successfully.

Takeaway

This course will operate similarly to a normal course with a couple things that might be different to what you are used to:

1) An "Exam" in this course is really 5 individual quizzes given at once.
2) All quizzes will be graded on a "Pass", "Needs Revision" or "Not Yet" scale and no partial credit will be awarded. Only results of "Pass" count toward your grade.
3) You get to retake quizzes up to two more times to bring the result up to a "Pass"
4) You get to rework questions on each homework assignment as many times as you want until the due date.
5) Your progress will be posted on Blackboard, but it is up to you to make sure you retake quizzes when you need to and to keep track of where you stand in relation to your desired grade in the course.

Other than coming to office hours for retakes, the course will operate as "usual" with no extra work on your part. Come to every class, keep up with the homework (and redo problems until you get them correct), prepare for quizzes and retake them when necessary and you will succeed in the course.

Your final grade will be based on the following four criteria:

Standard Quizzes:

There are 28 standards in the course. You will be quizzed on each standard as the course progresses. An "Exam" consists of 5 quizzes given at once (but graded individually). Each individual standard quiz will be graded on the following scale:

- **Pass**: All questions are answered correctly and in the correct format.
- **Needs Revision**: There are one or two minor errors present (sign, spelling, forgot to include units, etc.) that can be revised and submitted ***by the next class*** to earn a "Pass". This revision doesn't count as a retake.
- **Not Yet**: The quiz either has a major error, many minor errors, or is incomplete. A retake ***during office hours*** is necessary for another chance at a "Pass" for this standard.

Each standard quiz can be retaken twice until a fixed date (see table below for list of dates). You can think of this as a "three-strikes" policy, that is, if you earn a "Not Yet" on the same standard quiz three times, you can no longer retake this quiz.

MyMathLab Online Homework:

There will be online homework due every Friday morning. The goal of this homework is to help you prepare for the standard quizzes. You can rework homework problems as many times as you want until the due date is reached. Maintaining a certain percentage of completed homework problems will affect your final grade.

Attendance and Participation:

We will frequently do in-class work consisting of attempting problems alongside your classmates that are similar to those that will appear on the homework and quizzes. As such, it is crucial to be present for every class and participate in your group work and discussion. Maintaining a certain percentage of attendance will affect your final grade.

Final Exam:

SUNY Cortland requires that I give a cumulative final exam in the course. Since time constraints do not permit retakes, the final will be graded on a percentage scale using partial credit. See below for minimum score thresholds for certain grades.

Assignment of grades

The final grades will be decided according to a "bundle" system. The table below shows the minimum requirements to receive the given letter grade.

Desired Course Grade	Quizzes Passed	Homework Completed	Attendance	Final Exam Grade
A	22+	At least 85%	At least 90%	At least 70%
B	19-21	At least 75%	At least 80%	At least 60%
C	16-18	At least 65%	At least 70%	At least 50%
D	13-15	At least 55%	At least 60%	At least 40%
E	Less than 13	Less than 55%	Less than 60%	Less than 40%

A grade may be awarded a + (plus) for going above the required expectations in one or two categories and a (-) for coming close but falling short in one or two categories.

Some things that can boost your grade to a + (plus):

- Perfect attendance
- Completing a high percentage of the online homework
- Scoring higher than required but below 90% on the final exam

Some things that can lower your grade:

- Poor attendance
- Not completing enough of the online homework
- Performing slightly, but not drastically below the thresholds above on the final exam

The standard quizzes have the biggest influence on your overall grade, and will be used to settle any grade ambiguities and for midsemester evaluation. In particular, it **will not be possible to receive a passing grade (C- or better) in the course without passing at least 16 quizzes.**

Detailed Course Procedures

Revisions:

If you receive a score of "Needs Revision" on a quiz, this means you have made one or two small errors which need to be corrected. You will be given a blank copy of the quiz. Rework the quiz and bring it and the original to the **next class period**. If the quiz has been successfully corrected, you will receive a "Pass". If the quiz is not corrected properly or you fail to turn in the quiz the next class period, you will have to retake the quiz for a chance to earn a "Pass".

Retakes:

If you receive a score of "Not Yet" on an in-class quiz, you are allowed two retakes. This means you have three chances in total to pass each quiz. **You must come to my office hours outside of class in order to complete a retake.** A retake will not be the exact same quiz, but a different quiz similar in length and difficulty which covers the same material. You may take at most two retakes in one day. Each standard has a due date passed which you can no longer retake quizzes, so be sure to take advantage of your available retakes in a timely manner.

Here are the times during the week that you may come to my office (Moffett 123B) without an appointment and take up to two retakes at a time:

- Monday: 10 – 11 AM
- Tuesday: 1- 2 PM
- Wednesday 10 – 11 AM
- Thursday: 1 – 3 PM.

If you are unable to come to my office during those times, you can also set an appointment with me via email (nicholas.packauskas@cortland.edu).

Tokens:

You will start the class with three "tokens" which can be exchanged for a one-time exemption to a rule (within reason). For example, you could exchange a token to attempt a third retake on a specific quiz, get a 3-day extension on a homework assignment, or excuse an absence. There may be chances to earn additional tokens during the semester.

Final Exam:

The final exam will be cumulative. It will be graded out of 150 points, with partial credit awarded for work towards a correct solution. There are no retakes available for the final exam. Failing to score above certain thresholds will result in lowering your grade by one letter grade. For example, if you meet the requirements in the table above for an B but score a 50% on the final, you will receive a C. However, if you score a 90% or above on the final, your grade will be raised by one letter grade (e.g. from a B to an A).

Standards

Unit 1 – Graphs and linear equations. Basic function theory. Note that the quiz dates are not in the same order as the standards.

Standard	Learning Goals	Quiz Date	Last day to Retake
1A	I can sketch the graph of an equation. I can find vertical and horizontal asymptotes on a graph. I can use graphs to find solutions and answer questions.	9/3	10/6
1B	I can identify linear equations and graphs. I can recognize when an equation is in slope-intercept form or point-slope form. I can determine the equation for a line between points and identify when lines are parallel, perpendicular, or neither.	9/10	10/6
1C	I know what the definition of a function is. I can determine whether or not a graph represents a function. I am comfortable using function notation and interpreting inputs and outputs. I can determine the domain of a function using algebra.	9/24	10/6
1D	I can determine when a function is odd, even or neither using algebra. I know what odd/even means in terms of a function's graph.	9/17	10/6
1E	I can compute the average rate of change of a function on a given interval. I can relate the average rate of change to the slope of a line. I can interpret what the average rate of change means in a real-world context and identify its units.	9/24	10/6
1F	I can recognize the different types of graphical transformations of a given functions. I can write formulas for transformed functions.	9/24	10/6
1G	I can compose functions and recognize when a function is a composition of two functions. I can use compositions in real-world contexts.	9/24	10/6
1H	I can recognize when two functions are inverse to one another. I can use a graph to determine if a function is invertible. I can find the formula for the inverse of a given function.	9/24	10/6

Unit 2: Quadratic, polynomial, rational, and exponential functions.

Standard	Learning Goals	Quiz Date	Last Day to Retake
2A	I can recognize when a graph or formula represents a quadratic equation. I can find the zeros of a quadratic function by factoring or using the quadratic formula.	10/1	11/3
2B	I can find the vertex of a quadratic function by completing the square. I can interpret what the vertex of a quadratic function means in real-world contexts.	10/22	11/3
2C	I can recognize polynomial functions and I can identify the degree, leading term, and end behavior of polynomial functions.	10/8	11/3
2D	I can use the rational root test to identify possible zeros of a polynomial function. I can use synthetic division on polynomial functions to help me find their real zeros.	10/22	11/3
2E	I can do arithmetic with complex numbers and find the complex zeros of a quadratic function. I can use conjugates and long division to help me find the zeros of a polynomial.	10/15	11/3
2F	I can find the zeros, asymptotes, and end behavior of rational functions. I can identify and sketch graphs with these features.	10/22	11/3
2G	I can recognize exponential functions and their graphs. I can determine the formula for an exponential function through two points.	10/22	11/3
2H	I can compute compound interest and continuously compounded interest. I can use the interest formulas to answer questions relating to interest.	10/22	11/3

Unit 3: Logarithms and Basic Trigonometry

Standard	Learning Goals	Quiz Date	Last day to Retake
3A	I can convert between logarithmic and exponential equations and can compute basic logarithms. I know what the common logarithm and natural logarithm are.	10/29	12/8
3B	I can apply the basic rules of logarithms and use them to solve exponential equations.	11/19	12/8
3C	I can convert angle measures between degrees and radians. I can use angle measures to compute circular arc lengths.	11/5	12/8
3D	I understand the unit circle and have memorized its most important points.	11/19	12/8
3E	I know the unit circle definition of the 6 basic trigonometric functions (sine, cosine, tangent, secant, cosecant, and cotangent). I can use the unit circle and my calculator to compute the value of trigonometric functions of a given angle.	11/12	12/8
3F	I can identify properties of formulas and graphs of sinusoidal functions and can determine the formula for a given graph.	11/19	12/8
3G	I can use the inverse trigonometric function, complementary and supplementary angles, and periodicity to determine the solutions to trigonometric equations.	11/19	12/8
3H	I understand the right triangle definitions of the trigonometric functions, and can use them to solve triangles and answer real-world questions.	11/19	12/8

Unit 4: Advanced Trigonometry

Standard	Learning Goals	Quiz Date	Last Day to Retake
4A	I can use basic trigonometric identities and algebra to verify other trigonometric identities in an organized way.	12/3	12/15
4B	I can utilize the sum and difference, double angle, and half-angle identities to compute the exact values of trigonometric functions evaluated at given angles.	*	12/15
4C	I know the law of sines and the law of cosines and can use them to solve non-right triangles.	12/10	12/15
4D	I can plot points given in polar coordinates and can convert between polar coordinates and cartesian coordinates.	*	12/15

*These standards will not have an in-class quiz. You can take them any time during office hours in the last weeks of class.

Sources:

Lewis, Drew. "Student anxiety in standards-based grading in mathematics courses." *Innovative Higher Education* (2019): 1-12.

Muñoz, Marco A., and Thomas R. Guskey. "Standards-based grading and reporting will improve education." *Phi Delta Kappan* 96.7 (2015): 64-68.

Scriffiny, Patricia L. "Standards-based grading." *Educational Leadership* 66.2 (2008): 70-74.