

CORNING COMMUNITY COLLEGE VIA SAYRE AREA HIGH SCHOOL
Math/Physics/Technology/Engineering (MPTE) Division
School Year 2016-17 (CCC-Fall 2016)

Course Number: Math 1610: Calculus 1

Instructor Name: Mr. Mark Noldy, M.Ed., LSSBB

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Classroom Location: Room 124

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Website: PlanetNumeracy.com (Visit!)

Twitter: twitter.com/PlanetNumeracy (Follow! Turn on notifications! Re-tweet often!)

Facebook: facebook.com/PlanetNumeracy (Like!)

Office Hours: 7:40 – 7:55 and 3:18 – 3:30 (by appointment only)

My class schedule can be found at planetnumeracy.com/my-schedule-16-17

Course Description: This is a first semester in differential and integral single variable calculus. Basic theory using algebraic and trigonometric functions and applications are covered concurrently. Topics include limits, derivatives, considered both algebraically and graphically, differentials and their use as approximations, the indefinite and definite integrals with applications to areas, volumes, surface area, arc length, moments and center of mass. (4 credits)

Prerequisite: The *successful* completion of four years of high school math, including precalculus, or teacher recommendation.

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Course Learning Outcomes/Global Learning Objectives:

Students will be able to:

- Demonstrate understanding of the definitions of limit, continuity, derivatives and the definite integral.
- Determine limits of functions algebraically, numerically, and graphically
- Determine the derivatives of algebraic and trigonometric functions involving sums, differences, products, quotients, and compositions
- Solve application problems involving the derivative.
- Determine indefinite and definite integrals of basic algebraic and trigonometric functions
- Solve application problems involving the definite integral.
- Use a Computer Algebra System (CAS) to solve application problems involving limits, derivatives, and integrals

Textbook Information / Supplemental Course Materials

- ✓ **Textbook required:** *Calculus of a Single Variable*, 9th edition, by Larson and Edwards; ISBN: 978-0-547-21290-6
- ✓ **Calculator required:** TI-84 graphing calculator (I have CLASSROOM calculators.)
- ✓ **Internet access is required** for using of Wolfram Alpha on Lab reports.
- ✓ **Quadriple paper** is recommended for scratch work and completing homework assignments.
- ✓ **A binder** is required to create a portfolio of notes, handouts, homework, etc.
- ✓ **Stapler** may be needed for stapling HW and other assignments, though most are submitted electronically.
- ✓ **PlanetNumeracy.com** will be used for the online repository of LarsonCalculus.com videos and course documents as well as for posting blog comments (Yeah, Collins Writing!).

Tentative Outline / Timeline of Course Topics [see attached]

Chapters P-4, 7

Quarterly Evaluation/HS Grading Policy: The breakdown is as follows:

Class Participation/The "X" Factor	5 %
Homework/Labs	10 %
Quizzes	35 %
Exams (in class)	50 %

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Each quarter, the worst grade will be eliminated.

End of the Year CCC letter grades will be assigned as follows:

Your final letter grade in the course will be a simple conversion from your final high school grade using the table below. Please note the Final Exam score will count twice – once for a last test score in the high school 4th quarter. This prevents students from “phoning it in” at the end of the year.

Test Average	93-100	90 -92	87-89	83-86	80-82	77-79	70-76	60-69	below 60
ACE Grade	A	A-	B+	B	B-	C+	C	D	F

Components of Course

Class time:

Class time will consist of mini-lectures with collaboration on recommended chapter exercises, where you will be fleshing out notes. You will also be learning to use WolframAlpha.com for computations and graphical analyses. “Stare Method” will not work in this course. ACE Calculus is a ***college-level*** course. I will not be spoon-feeding you. Moreover, much of the needed practice on skills as well as your individual concept development will come from ***reading*** the text and ***watching*** Uncle Buck in the online videos. The successful student will be doing a good bit of work outside of class (about 80-120 minutes each evening), and reviewing ideas daily to connect them. To maximize learning, it is important that we use class time wisely and productively, so please be on time, and be prepared.

Homework (HW):

- Recommended assignments (see attached) will rarely be collected and graded. Whether students have done assignments will be apparent based on documented online activity, and even more so based on chapter exam scores.
- HW will be primarily from the textbook. We will be using the computer lab for some HW and lab assignments, often using WolframAlpha.com. All assignments will be done on quarter-inch quadrille paper.

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Lab Reports:

- There will also be specific lab assignments that may require computer usage (Wolfram Alpha, Seeberger, etc.). Plan accordingly for use of high school computers if you do not have access outside of school. Lack of access is not a viable excuse to skip this work. The labs are a CCC requirement. (Remember this is a college course that **you** chose to take.)
- No prior knowledge of these applications is required, although being computer literate is certainly beneficial.
- No assignments will be accepted after the deadline.

Quizzes:

There are several short quizzes given throughout the year. These are formative in nature which is why they are only 35% of the quarterly grade.

- A missing quiz will be recorded as a temporary zero. Once you have earned a score, the score will supersede the temporary zero.
- A missing quiz must be taken within 3 days of the absence, and I reserve the right to give an alternative form of the quiz.
- Remember that your worst score will be dropped each quarter. This is designed to accommodate for a bad day or the **rare** instance of an absence.

Tests:

There will be 6 40-minute timed exams during the course as well as a 120-minute timed cumulative final exam (provided by CCC and augmented by me) given during final exam week. The final exam will also count as the 7th test grade occurring in the 4th quarter. This also prevents students from “phoning it in” at the end of the year.

- Extra time is not provided, unless you have such an accommodation (e.g., IEP, 504, etc.).
- If an emergency arises and you cannot make it the day of an exam, you must **contact me BEFORE** to obtain permission to re-schedule an **alternative** form of the assessment. Your classmates want their exam results as soon as possible, and test results are not returned until every student has written the exam.
- 0 is recorded for missed exams.
- I reserve the right to score a missed exam as a 0 if it is not written within three days of an excused absence.
- Unexcused absence earns a 0.

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Competencies:

Corning CC requires students to score 90% on each of 3 Competencies.

- They cover 3 areas: Limits, Derivatives, and Integrals
- Students may take these Competencies up to 6 times.
- Student who do not score 90% on all 3 Competencies must be given an F for their Corning CC letter grade, regardless of their high school grade.

Attendance Policy:

Attendance and active participation in class is expected.

- I do not distinguish between “excused” and “unexcused” absences. Whatever the reason, if you are not in class, then you are missing content. If you are involved with activities that will cause you to miss extensive class time, then a college level math course may not be for you. Or you may need to make regular 9th period appointments with me.
- I do not directly penalize for absences, but there are natural consequences that ensue as a result of chronic absenteeism and chronic tardiness. Such consequences include (but are not limited to) missing a quiz, missing announcements, missing material, missing an exam, or missing HW and Lab submissions. Therefore, absences and tardiness can result in low grades and serious gaps in your learning.
- If you are absent, you are still responsible for learning missed material and obtaining assignments and/or any handouts provided that day. Be sure to read the next topic and work the exercises on that topic to stay as caught up as possible. Use 9th period judiciously.
- Please notify me of serious illness, expected absences, or extenuating circumstances.

Student Withdrawal Policy / Last Day to Drop: If for any reason a student must withdraw from this course, it is the student’s responsibility to do so by contacting Corning’s Registrar’s Office. A grade of “W” will be assigned if the withdrawal occurs before **November-20, 2016**, the official drop deadline for this course, and a grade of “WF” or “WP” thereafter. If a student simply stops attending rather than officially withdrawing, he or she will receive a grade of “F” for the course. Instructors may drop students for non-attendance. Check with CCC, but as I understand it, there is no refund of tuition if a student withdraws after the deadline.

Electronics Usage: Except for appropriate calculators, students are strictly prohibited from using electronic devices in this class, including cell phones, laptops, etc. Such activities as phoning, web-surfing, texting, and so forth represent significant classroom distractions that interrupt the learning process for you and other students in the class. Cell phones and devices with Internet access may not be used as calculators.

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Classroom Conduct: A student who creates a disturbance in class may be directed to leave the class. Failure to comply with such a directive could result in SASD consequences as well as suspension or dismissal from the College after an appropriate hearing. Ask Mrs. Richmond for a copy of the CCC Course Catalog to see the “Code of Student Conduct.”

Academic Honesty Policy: The principles of integrity, respect and ethical behavior are long standing traditions at CCC (and SASD). It is expected that all students will recognize these values and adhere to all aspects of student conduct and academic honesty inside and outside of the classroom. The act of academic dishonesty is one in which a student is trying to gain an unfair academic advantage or is avoiding actions required by a course, which have been designated to improve some aspect of the student’s education. Knowingly and willfully aiding, collaborating, and or “keeping quiet” regarding such a violation of the Academic Honesty policy, even if not personally committing any violation, is considered academic dishonesty.

If a violation of this policy is believed to have occurred, the instructor will conduct an investigation. The minimum penalty for academic dishonesty is a 0 on the assessment. The maximum penalty is expulsion from the class and/or the College including vacating any and all previously earned CCC credits. Please see the “Code of Student Conduct: Academic Honesty” section in the CCC Course Catalog for further information. (Again, ask Mrs. Richmond.)

Students with Disability Information: Students with learning, physical, or psychological disabilities who wish to receive accommodations are required to self-identify by making a formal request for services, and to provide current documentation that reflects the nature of the disability (not only to Sayre but to CCC as well). Reasonable legal accommodations in the classroom will be provided for students with appropriately documented disabilities. Confidentiality will be maintained at all times.

Class Cancellation: Class “cancellations” must sometimes be planned due to other school events (e.g. class trip, blood drive, prom decorating, etc.). Cancellations may also occur spontaneously as a result of unforeseen events (e.g., fire drill, drug dogs, etc.).

Other: If you are having difficulties, do not wait until proverbial 11th hour to seek assistance. Also, if there are aspects about the course that you do not like, understand that the curriculum is pre-ordained by Corning, and I am duty-bound to adhere to it. Another general rule of thumb you have no doubt learned is that college students spend 2-3 hours outside of class for *each* hour in class. This rule of thumb certainly applies to a college-level statistics course. With 40-minute classes, the successful student will be spending about 80-120 minutes daily outside of class.

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CORNING COMMUNITY COLLEGE (via SHS)
Calculus I, Math 1610
2016-17

Month	Topic	Assignment
Aug	Intro	Take-Home Test (Oct)
Sept	P.1 Graphs and Models	
Sept	P.2 Linear Models	
Sept	P.3 Functions and Their Graphs	
Oct	P.4 Fitting Models to Data	
Oct	1.1 A Preview of Calculus	1.1: Read 1.1; 1-9 odd
Oct	1.2 Graphic and Numeric limits	1.2: Read 1.2:1-9 odd, 13, 15-29 odd, 33, 37,39,41,47,53, 67-71
Oct	1.3 Evaluating Limits Analytically	1.3: Read 1.3; 1-33 EOO, 37-43 odd, 45-81 EOO, 89,91,93
Nov	1.4 Continuity and 1-Sided Limits	1.4: Read 1.4; 1-65 EOO, 67-81 odd, 91-97 odd
Nov	1.5 Infinite Limits	1.5: Read 1.5: 1-51 odd, 65- 68
Nov	2.1 The Derivative and the Tangent Line Problem	2.1: Read 2.1; 1-27 odd, 33-37 odd, 39-42, 53,75,76, 79, 83, 85
Nov	Exam I - Chapter 1	
Nov/Dec	2.2 Basic Differentiation Rules and Rates of Change	2.2: Read 2.2; 1,2,5-37 odd, 39-65 odd, 69 87-92
Dec	2.3 Product and Quotient Rules and Higher Order	2.3: Read 2.3; 1-39 odd, 43, 47, 59, 63, 65, 69, 73, 85, 93-101 odd
Dec	2.4 The Chain Rule	2.4: Read 2.4; 1-33 EOO, 43, 45-73 EOO, 87, 89, 91, 95, 97, 119-122
Dec	2.5 Implicit Differentiation	2.5: Read 2.5; 1-39 odd, 45, 47, 49, 53
Jan	2.6 Related Rates	2.6: Read 2.6; 1-19 odd, 21-33 odd, 43, 47
Jan	3.1 Extrema on an Interval	3.1: Read 3.1; 1-10, 11-39 odd, 53, 54, 55-58, 63-66
Jan	Exam II - Chapter 2	
Jan	3.2 Rolle's Theorem and Mean Value Theorem	3. 2: Read 3.2, 1-23 odd, 31, 32, 37-45 odd, 69, 71, 73-76
Jan	3.3 Increasing & Decreasing Functions, 1 st Derivative Test	3.3: Read 3.3; 1-49 EOO, 57-62, 63-69 odd, 70, 75, 79, 91-96
Jan	3.4 Concavity and 2 nd Derivative Test	3.4: Read 3.4; 1-17 odd, 19-51 EOO, 61, 63, 65, 67, 75-78
Jan/Feb	3.5 Limits at Infinity	3.5: Read 3.5: 1-6, 13-37 odd, 43, 45, 47, 59-75 EOO, 103, 104
Feb	3.6 A Summary of Curve Sketching	3.6: Read 3.6; 1-4, 5-29 EOO, 37-45 EOO, 49, 51
Feb	3.7 Optimization problems	3.7: Read 3.7; 3-19 odd, 21, 23, 25, 29, 33, 44, 37, 39, 47, 48
Feb	3.8 Newton's Method	3.8: Read 3.8; 1, 3, 5, 7, 11, 13, 21, 23, 33, 35-38
Feb	3.9 Differentials	3.9: Read 3.9; 1, 3, 9, 11, 15, 21, 23, 25, 29, 31, 35

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Feb/Mar	4.1 Antiderivatives and Indefinite Integration	4.1: Read 4.1; 1, 3, 5, 7, 9-41 EOO, 55-63 odd, 69-74
Mar	Exam III – Chapter 3	
Mar	4.2 Area Under the Curve	4.2: Read 4.2; 1-21 EOO, 25-35 odd, 37, 41, 45-53 odd, 61, 63
Mar	4.3 The Definite Integral	4.3: Read 4.3; 5-45 EOO, 47, 49, 51, 55, 57, 59, 63, 64
Mar/Apr	4.4 The Fundamental Theorem	4.4: Read 4.4; 1, 3, 5-33 EOO, 35, 37, 39-55 EOO, 61, 63, 75-87 odd, 97, 111, 112
Apr	4.5 Change of Variables	4.5: Read 4.5; 1-4, 5-65 EOO, 91-96
Apr	4.6 Numerical Integration	4.6: Read 4.6; 1, 9, 13, 17, 23, 25, 27, 39
Apr	Exam IV - Chapter 4	
Apr	7.1 Area Between Curves	7.1: Read 7.1; 1-6, 7, 9, 13, 15, 17, 19, 21, 25, 26, 27, 31, 33, 37, 41
Apr/May	7.2 Volumes – Disks	7.2: Read 7.2; 1-21 odd, 31, 41, 63
May	7.3 Volumes – Shells	7.3: Read 7.3; 1-11 odd, 15, 17, 19, 21, 23, 27, 29
May	7.4 Arc Length and Surface Area	7.4: Read 7.4; 3, 5, 7, 15, 17, 37,39,41, 45,55
May	7.6 Moments and Center of Mass	7.6: Read 7.6; 1-25 odd
May	Exam V - 7.1-7.4	
May	7.5 Work	7.5: Read 7.5; 1-13 odd
May	7.7 Fluid Pressure	7.7: Read 7.7: 1-19 odd
May	Review	
Jun 2	Final Exam (all competencies must be passed)	

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