Syllabus for Calculus 1 Fall 2022

Math 171 section 900 crn 41254
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Text: Stewart, et al Calculus early transcendentals ed 9
Access code to WebAssign is required.

Your actual syllabus in Canvas will be more detailed, and can be accessed once enrolled in the course. It will include directions on making an account in WebAssign.

There will be two optional Zoom meeting per week: Tuesday and Thursday at 9:00 am. The recordings are available here in Canvas. Go to the Zoom tab, then Cloud Recordings. If a password is needed it is found below the recording icon. If you cannot attend the meetings but have a question, please email me in Canvas and I will answer it.

All the work for the course is done in WebAssign, communication is through Canvas.

1. Each week there are two homework assignments and one Exam.

2. The first assignment is due by 11:59 p.m. on Tuesday, the second by 11:59 p.m Friday. Week 1 is an exception, there is only one homework due Friday. It longer than usual and is all review.

3. You may spend as much time as you like on the homework, using the hints and the online help.

4. Exams are due Sunday by 11:59 p.m.

5. The weekly exam is approximately 12 questions, timed at 90 minutes, and may not be taken more than once. Please do not open the exam until you are ready to take it.

6. Participation in this course means the completion of assignments. Anyone missing 6 or more assignments will automatically fail the course irrespective of grade. There are no exceptions to this policy.

Your grade will be determined as follows:

Homework is 20%, Weekly exams 60%, Final Exam 20%

Topics include: Functions, graphs, limits, continuity, derivatives and antiderivatives of algebraic and transcendental functions; techniques of differentiation; applications of derivatives, polynomial approximation; indeterminate forms; maxima and minima and applications; curve sketching; the definite integral; the fundamental theorem of calculus; integration by substitution.

Prerequisite: MATH 162 with a grade of "C" or better.

Upon successful completion of this course, students will be able to:

1. Evaluate limits of functions.

2. Differentiate algebraic and transcendental functions.

3. Solve problems involving rates of change and optimization problems.

4. Graph functions and determine features of graphs such as intervals of increase and decrease, concavity, inflection points, asymptotes, holes, etc.

5. Find anti-derivatives of functions and evaluate definite integrals using the definition of the integral and the Fundamental Theorem of Calculus.

6. Evaluate definite and indefinite integrals using substitution.

It is your responsibility to keep track of how well you are doing in the class. You can access your current grade from WebAssign

Students who believe they may need an accommodation based on the impact of a disability should contact me privately to discuss their accommodation form and specific needs as soon as possible, but preferably within the first week of class. If you need to request reasonable accommodations, but do not have an accommodation form, please contact the Center on Disability phone number 215-751-8050.

Please be mindful of the Withdraw & Incomplete Dates

Students must be familiar with and adhere to the college policy on academic honesty

Finally a word about cheating. You may use any resources you like for this class, online or otherwise. I recommend wolframalpha, but some prefer mathway or symbolab . Desmos is good for graphing. The number of web based math applications is almost unlimited. Cheating for this course is defined as having someone else do your class work, either paid or otherwise. Getting the answers from classmates or others and using them as your own is unacceptable. To this end, I will periodically ask for written or verbal explanations. Therefore you need to keep your written notes from tests, and also be prepared to explain your reasoning in a private Zoom meeting.

While I am aware that most students take math courses only when required to do so, I sincerely hope that this course will not only be stress free, but also enjoyable and instructive. Much of this depends on you. Please ask questions, give your opinion, and participate!

Course Schedule

Week 1 Review

1.1,1.2	Polynomials Functions: Domain and Range, Degree, Leading Coefficient,Constants
1.3	Rational Functions
1.4	Exponential Functions

Week 2

1.4	Exponential functions
1.5	Inverse functions, logarithms and inverse trigonometric functions

Week 3

2.1	Tangent and Velocity Problems
2.2	Definition of a Limit
2.3	Calculating Limits Using Limit Laws
2.5	Continuity

Week 4

2.6	Limits at infinity
2.7	Derivatives and rates of change
2.8	The derivative as a function

Week 5

2.8	The Derivative as a function
3.1	Derivatives of Polynomial and Exponential functions

Week 6

3.2	The Product and Quotient Rules
3.3	Derivatives of Trigonometric Functions

Week 7

3.4	The Chain Rule
3.5	Implicit Differentiation
3.6	Derivatives of logarithmic functions

Week 8

3.6	Derivative of the log, and logarithmic differentiation
3.9	Related Rates
3.10	Linear approximation, differentials

Week 9

4.1	Maximum and Minimum values
4.2	The Mean Value Theorem
4.3	How Derivatives affect the shape of the graph

Week 10

4.4	Indeterminate forms and L'Hopital's rule
4.5, 4.6	Curve sketching
4.7	Optimization problems

Week 11

4.9	Newton's Method
4.10	Antiderivatives

Week 12

5.1	Areas and Distance
5.2	The Definite Integral
5.3	The Fundamental Theorem of Calculus

Week 13

5.4	Indefinite Integrals and Net Change
5.5	The Substitution Rule

Week 14

	Review and Final