171, Calculus 1

Spring, 2020

CRN 10592, Section 003

Time: Saturday, 8:00 am – 12:05 pm

Room: BR-11

CONTENTS

Syllabus

Reviews for tests 1 – 3

Review for the final exam

171 Calculus 1
Syllabus

Catalog Description

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.

Learning outcomes

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

Book: **James Stuart. Calculus. Early Transcendentals. Edition 8. 171, Special edition for the community college of Philadelphia**
Cengage Learning
ISBN: 978-1-337-05924-4

Instructor: Dr. Arkady Kitover

Office: Main - B2 - 25J, North East - 327

Office hours: North East – TWR, 4:30 pm – 6 pm,
Main – Saturday, 3:40 pm – 4:40 pm

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Web Page: http://faculty.ccp.edu/FACULTY/akitover

The web page contains the syllabus, the reviews with detailed solutions, and MAPLE attachements.

Contents: **Chapters 1 - 5**
Limits, Derivatives, Transcendental functions, Applications of derivative. Antiderivatives and definite integrals.
Appendix (provided):
Applications of Taylor and Maclaurin polynomials.

Tests:

Test 1. Limits.
40 points with possibilities for extra credit.

Test 2. Rules of differentiation.
40 points with possibilities for extra credit.

Test 3. Graphing problems. Applied minimum and maximum problems, Newton's method, L'Hopital's Rule. Linear and quadratic approximation, Taylor polynomials.
60 points with possibilities for extra credit.

You will need a scientific calculator for tests 1 and 3.

Cumulative Final – 100 points.

Grading:	**Average of all tests.**
A	**90%-100% (216 – 240 points)**
B	**80%-89% (192 – 215 points)**
C	**70%-79% (168 – 191 points)**
D	**60%-69% (144 – 167 points)**
F	**Less than 60% (less than 144 points).**

No matter what your average is, you will not get an "A" or a "B" if you get less than 50% or 40%, respectively, on the final.

You can make up the regular class tests, not more than one make up for each test. No make ups for the final.

If you miss a test, I will give you a possibility to take it only if you have a valid and documented excuse.

What you need to repeat from precalculus.
(Chapters' numbers are given for the book of Larsen and Hostetler "Algebra and Trigonometry", the fifth edition. You can use any other precalculus textbook).

Chapter 2. Functions and their graphs (functions, graphs, translations and combinations, compositions, inverse functions).

Chapter 5. Exponential and logarithmic functions and their graphs, properties of logarithms.

Chapter 6. Angles and their measure. Graphs of basic trigonometric functions.

Chapter 7. Trigonometric identities. Sum and difference formulas. Trigonometric equations.

Class Rules.

ATTENDANCE: According to college rules the students must attend all classes. Moreover, good attendance strongly correlates with the success in this class. It is especially important for classes meeting once a week. By these reasons I will call the roll twice: 20 min. after the class starts and at the end of the class. For each missed roll I will subtract 5 points from your total. If you need to be excused from class send me an email BEFORE the class starts. Of course, I will make an exception in the case of an emergency. Students who do not miss any roll or have DOCUMENTED excuse for each case

of missing the roll will receive 50 extra points added to their total at the end of semester.

No food is allowed in the classroom. You may bring beverages.

You may not use any electronic devices for the purposes not related to the class work (texting, surfing, etc.) For a violation of this rule I will subtract 10 points from your total

Put your cell phones in the vibration mode before the class starts.
No cell phones during a test (unless you use your cell phone as a calculator).

Recommended Homework

The numbers of Sections, Pages, and Problems are given from Stewart, Early Transcendentals, Edition 8.
The homework problems will be discussed in class but I strongly recommend that you first try solving them at home.

Section	Page (Pages)	Problems
1.1	21	39, 50
1.2	33, 34	1, 2, 8, 9
1.3	44	35, 39, 43
1.4	54	21, 23, 30
1.5	67	35, 52, 56
2.2	93	20
2.3	102 – 104	7, 17, 23, 29, 51, 55
2.5	125	46
2.6	138	19, 23, 29, 33, 35, 43
2.7	148 – 150	5, 18, 20, 24
3.1	180 – 182	7, 15, 23, 29, 31, 49, 65, 75
3.2	188 – 189	3, 5, 13, 29, 51
3.3	196 – 197	5, 9, 15, 39 – 47
3.4	204	9, 17, 35, 45
3.5	215 – 216	5, 11, 19, 29, 37, 57
3.6	223	7, 11, 39, 43, 47
3.7	233 - 236	9, 13, 23, 37
3.10	256	3, 9, 10, 26, 28
4.1	284	49, 53, 57, 61
4.4	311, 312	17, 21, 35, 47, 57, 61
4.5	321, 322	6, 15, 27, 37, 49
4.7	337 - 340	13, 19, 25, 39, 68
4.8	349	23, 27
4.9	355 - 356	15, 19, 33, 39, 41
5.3	400, 401	27, 37, 41, 57, 61, 63
5.5	418, 419	3, 11, 33, 55, 69