

172

Calculus 2

Fall 2019

CRN 40769

Section 002

Time: Saturday 12:30 – 4:35 pm

Room BR-11

172 Calculus 2

Syllabus

Catalog description

Fundamental theorem of calculus, integration by substitution, areas and volumes, techniques of integration, arc length, improper integrals, polar coordinates and parametric equations, conic sections, sequences, infinite series, power series, convergence tests, alternating series, Taylor and Maclaurin series. Prerequisite: MATH 166 with a grade of "C" or better or MATH 171 with a grade of "C" or better.

Learning outcomes

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

1. Evaluate integrals using a variety of techniques
2. Solve problems involving applications of integrals such as finding areas, volumes, arc length, work, etc.
3. Differentiate and integrate functions defined by parametric equations or in polar form
4. Test infinite series for convergence and represent functions using power series

Book: James Stuart. **Calculus. Early Transcendentals.**
MATH 172, Community College of Philadelphia
Edition 8
CENGAGE Learning

ISBN: 978-1-327-05226-9

Instructor: Dr. Arkady Kitover

Office: NE campus 327, Main – B2-25J

**Office hours: Main campus, Saturday 4:40 – 5:40 pm (by appointment only),
NE campus, TW 4:30 – 6:25 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 a Maple attachment.

Contents:

- I. Indefinite integrals and technique of integration.**
 - Section 4.7 – Antiderivatives. This is a review of the corresponding section in the Calculus 1 book. For your convenience a copy of this section is provided in the package you received.**
 - Section 5.5 – The Substitution Rule.**
 - Sections 7.1 – 7.6**
- II. Definite integrals and their applications.**
 - Sections 5.3 – 5.5.**
 - Sections 6.1 – 6.4.**
 - Sections 8.1 and 8.2**
 - Section 10.2**
- III. Improper integrals and power series.**
 - Section 7.8.**
 - Sections 11.6 and 11.8 - 11.11**

Tests: Three tests in class, with possibilities for extra credit.

Test 1. Trigonometric integrals and trigonometric substitutions.

Integration by parts, integration of rational functions, rationalizing substitutions. (60 points)

Test 2. Areas, volumes, and other applications of definite integrals. (60 points)

Test 3. Improper integrals.

Power series, Taylor and McLaurin series, and their applications. (80 points)

Cumulative final 100 points.

Grading:	Average of all tests.
A	90%-100% (270 – 300 points)
B	80%-89% (240 – 269 points)
C	70%-79% (210 – 239 points)
D	60%-69% (180 – 209 points)
F	0% - 59% (less than 180 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.

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

No food is allowed in the classroom.

Put your cell phones in vibration mode before the class starts.

You may not use any electronic devices for texting, web surfing, and other activities not related to the class work. I will subtract 10 points from your total sum for every violation of this rule.

You may use your cell phone during a test only as a calculator

Recommended Homework

The numbers of sections and problems are given from
Stewart, Calculus, Early Transcendentals, 8

MATH 172

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(For section 4.9 see the package you received)

Section	Problems
4.9	3, 11, 37, 61, 73
5.5	11, 13, 19, 23, 33, 41, 49
7.1	13, 19, 21, 33, 37
7.2	5, 15, 29, 41
7.3	11, 17, 19, 25
7.4	9, 19, 27, 37, 45
7.5	27, 31, 47, 71
7.6	7, 15, 25, 27
5.3	21, 29, 37, 41, 55
5.4	35, 39, 43
5.5	55, 57, 59, 61, 63, 65
6.1	3, 5, 11, 15, 27, 31, 51
6.2	1, 9, 15, 33, 51
6.3	5, 13, 21, 25, 35
6.4	15, 21, 33
8.1	9, 13, 15, 29, 41
8.2	7, 15, 21
10.2	41, 45, 54, 65
7.8	9, 13, 21, 33, 37
11.6	3, 5, 15, 25, 35
11.7	15, 25, 33
11.8	3, 17, 27, 35, 41
11.9	7, 9, 17, 23, 29, 31
11.10	5, 23, 27, 47, 53, 59, 65, 77
11.11	9, 17, 21, 25, 29, 37