

MATH 122 Fall 2018

Sections 011 and 015

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Office hours: MW 2:20 — 3:10 PM, TTh 1:15 — 2:30 PM

Meeting Times

Section	Days	Times	Location
011:	TTh	10:05 AM - 11:20 AM	Gambrell 152
015:	TTh	2:50 PM - 4:05 PM	Callcot 201

Important deadlines you need to know

General Dates

Classes begin	Aug 23, 2018
Labor Day Holiday	Sep 3, 2018
Fall Break	Oct 18—19, 2018
General Election Day	Nov 6, 2018
Thanksgiving Recess	Nov 21—25, 2018
Last Day of Classes	Dec 7, 2018

Academic Deadlines

Last Day to Change/Drop without W	Aug 29, 2018
First Day W Grade Assigned	Aug 30, 2018
Last Day to Drop/Withdraw without WF	Oct 15, 2018

General Dates

First Day **WF** Grade Assigned

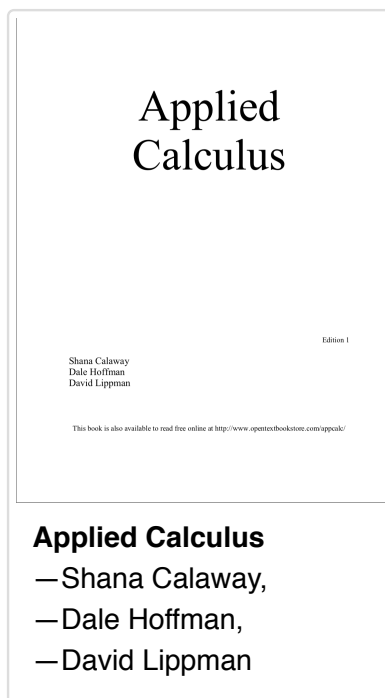
Oct 16, 2018

Students withdrawing from courses after the WF deadline (including past semesters) must process a petition through the withdrawal website [www.sc.edu/withdrawal]

Prerequisites

A grade of **C** or better in MATH 111/111I, or by an algebra placement test.

Text



Calculator

A graphing calculator is required for this course. Either the TI-83 or TI-84 is preferred, and as a matter of fact, highly recommended. A TI-89 or a similar calculator with a computer algebra system is not allowed on examinations.





Texas Instruments TI-83
Plus Graphing Calculator



Texas Instruments TI-84
Plus CE Graphing
Calculator, Black

Course Structure and Grading Policies

Your final score for the course will be computed as follows:

$$F = 0.15 * (HW + Q) + 0.1 * (T1 + T2 + T3 + T4) + 0.3 * FE$$

Homework

15% of the course grade. Starting on August 29th, a selection of problems from your textbook will be posted through MyOpenMath on the day of the lecture, and will be graded. You will have until the end of the next class day to complete the assignment (e.g. what is posted on Tuesday is due on Thursday at 11:59 PM; what is posted on Thursday is due on Tuesday at 11:59 PM).

Quizzes

15% of the course grade. At least a quiz will be given weekly except the week of a test, the first or the last week of classes.

Tests

Each test counts 10%, for a total of 40% of the course grade. There will be four in-class tests tentatively scheduled as follows:

Test #	Date
1	Thu, Sep 20
2	Tue, Oct 16
3	Thu, Nov 08
4	Tue, Nov 20

Final Exam

30% of the course grade. The dates for the final exam are:

- Section 011: Thursday, December 13th at 9:00 AM
- Section 015: Tuesday, December 11th at 4:00 PM

No make-up homework, quizzes or tests will be given. Only the following reasons are valid

excuses for missing quizzes or tests, and must be verified by letter from a doctor, guardian or supervisor.

- Participation in an authorized University activity (such as musical performances, academic competitions, or varsity athletic events in which the student plays a formal role in a University sanctioned event.)
- Required participation in military duties.
- Mandatory admission interviews for professional or graduate school which cannot be rescheduled.
- Participation in legal proceedings or administrative duties that require a student's presence.
- Death or major illness in a student's immediate family.
- Illness of a dependent family member.
- Religious holy day if listed on [www.interfaithcalendar.org].
- Illness that is too severe or contagious for the student to attend class.
- Weather-related emergencies.

Students should notify faculty members at least two weeks prior to the absence when possible. In all cases, students must contact the faculty member to request an accommodation upon return to class.

The course grade will be determined as follows:

GRADE	RANGE
A	90%-100%
B+	86%-89%
B	80%-85%
C+	76%-79%
C	70%-75%
D+	66%-69%
D	60%-65%
F	below 60%

ATTENDANCE POLICY

Attendance is mandatory. Penalties to your final grade apply as follows:

Students missing three sessions will have a penalty of 5 points in their final grade (this is equivalent to a half-letter penalty, e.g. from C to D+).

Students missing five sessions will have a penalty of 10 points in their final grade (this is equivalent to a full-letter penalty, e.g. from B to C)

Students missing seven sessions or more will have a penalty of 15 points in their final grade (this

is equivalent to a letter-and-a-half penalty, e.g. from A to C+)

Dishonesty

Students whose names appear on the attendance sheet, but are not present in class, will have immediately applied an extra penalty of 5 points in their final grade.

Further Information

Honor Code

The Honor Code applies to all work for this course. Please review the Honor Code at [this link]. Students found violating the Honor Code will be subject to discipline.

Notes, slides, other material

Class notes and other additional material will be stored in Dropbox. In that case, you may need an account to retrieve it. If you do not have one already, sign-in through [this link] with your academic e-mail address to receive a base 4GB storage, plus an extra 500MB, free of charge.

Blackboard

Remember to change your e-mail address on blackboard.sc.edu if necessary.

Student Disability Resource Center

If you have special needs as addressed by the *Americans with Disabilities Act* and need any assistance, please notify the instructor immediately.

Student Success Center

In partnership with University of South Carolina faculty, the Student Success Center (SSC) offers a number of programs to assist you in better understanding your course material and to aid you on your path to success. SSC programs are facilitated by trained undergraduate peer leaders who have previously excelled in their courses. Resources available to students in this course include:

- **Peer Tutoring:** You can make a one-on-one appointment with a peer tutor by going to www.sc.edu/success. Drop-in Tutoring and Online Tutoring may also be available for this course. Visit the previous website for a full schedule of times, locations, and courses.
- **Success Connect:** I may communicate with the SSC regarding your progress in the course. If contacted by the SSC, please schedule an appointment to discuss campus resources that are available to you. Success Connect referrals are not punitive and any information shared by me is confidential and subject to FERPA regulations.

SSC services are offered to all USC undergraduates at no additional cost. You are invited to call the Student Success Hotline at (803) 777-1000 or visit www.sc.edu/success to check schedules and make appointments. Success Consultants are available to assist you in navigating the University and connecting to available resources.

Supplemental Instruction

The Supplemental Instructor is Aaron Gulibon.

You can find the schedule and contact information at www.sa.sc.edu/supplementalinstruction/.

Learning Outcomes

A student who successfully completes Applied Calculus (MATH 122) will master concepts based on derivatives and integrals of elementary algebraic, exponential and logarithmic functions. Students will be able to solve (with and without the aid of a graphing calculator) applications involving maxima, minima, rates of change, motion, work, area under a curve, and volume. Students will be able to verbally interpret data given as graphs, tables, and equations, and put into words the relationship between a function and its derivative or integral.

Lesson Plan

Thu, Aug 23

PreCalculus Review

—Introduction to Functions

[p. 15 #1–30]

Tue, Aug 28

PreCalculus Review

—Linear Functions

[p. 40 1–34]

Thu, Aug 30

PreCalculus Review

—Quadratics

—Polynomials and Rational Functions

[p. 49 #1–14. p. 58 #1–28]

Tue, Sep 04

PreCalculus Review

—Exponents

[p. 45 #1–24]

Thu, Sep 06

PreCalculus Review

—Operations on Functions

[p. 27 #1–52]

Tue, Sep 11

PreCalculus Review

—Exponential Functions

[p. 66 #1–6]

Thu, Sep 13

PreCalculus Review

—Logarithmic Functions

[p. 72 #1–33]

Tue, Sep 18

Review for Test #1.

Thu, Sep 20

Test #1. PreCalculus Review

Tue, Sep 25

The Derivative

—Definition and Interpretation

[p.92 1–8, 11–13]

Thu, Sep 27

The Derivative

—Power and Sum rules

[p.105 #1–9]

Tue, Oct 02

The Derivative

—Product and Quotient Rules

[p.112 #1,4,7–9,10a,11a]

Thu, Oct 04

The Derivative

—The Chain Rule

[p.121 #3,4,7–12]

Tue, Oct 09

The Derivative

—Second Derivative

—Concavity

—Inflection Points

[p.126 #4,5,7–12,14–22]

Thu, Oct 11

Review for Test #2.

Tue, Oct 16

Test #2. The Derivative

Tue, Oct 23

Applications of the Derivative

—Demand, Cost, Revenue, Profit

—Marginal Cost, Marginal Revenue, Marginal Profit

—Average Cost, Average Revenue, Average Profit

[p.106 #10,11. p.113 #12] and the following problems

Thu, Oct 25

Applications of the Derivative

—Local Extrema

—Global Extrema

[p.139 #1–17, 22–24]

Tue, Oct 30

Applications of the Derivative

—Applied Optimization

[p.156 #15–19]

Thu, Nov 01

Applications of the Derivative

—Tangent Line Approximations

—Elasticity of Demand

[p.160 #1, 2, 7, 8]

Thu, Nov 08

Test #3. Applications of the Derivative

Thu, Nov 13

The Integral

—Antiderivative Rules: Building Blocks

[p.196 #1–10]

Thu, Nov 15

The Integral

—Antiderivative Rules: Substitution

[p.202 #1–8]

Tue, Nov 20

Test #4. Antiderivatives

Tue, Nov 27

Applications of the Integral

—Area and Signed Area

[p.177 #1–4, 15–20, 42–45]

Thu, Nov 29

Applications of the Integral

—The Fundamental Theorem of Calculus

—Riemann Sums

[p.177 #12, 13. p.189 #1–5. p.196 #11–18. p.202 #9–12]

Thu, Dec 04

Applications of the Integral

—Distance from Velocity
—Accumulation (Total Change)
[p.177 #5–11, 21, 22, 33]

Thu, Dec 06

Applications of the Integral

—Average Values
—Demand and Supply
—Consumer and Producer Surplus
[p.214 #19–26, 28. p.220 #1, 2abc, 3]