

Math 1432

Bekki George
bekki@math.uh.edu
639 PGH

Office Hours (starting next Monday):

Mondays 1-2pm,
Fridays noon-1pm
(also available by appointment)

Class webpage:

<http://www.math.uh.edu/~bekki/Math1432.html>

Important Information:

- Labs
- CourseWare Accounts
- Textbook
- Homework
- Daily Poppers
- Online Quizzes
- Exams and Final Exam

Labs/Workshops

Attendance is mandatory!

Quizzes will be given each Wednesday and Friday in face to face labs and on each attendance day in online labs.

Math 1432 Labs:

Section	Time	Room	TA
27263	MWF 9-10	CBB 120	Safaripoorfatide
27264	MWF 11-12	CBB 120	Choi Oh
14466	MWF 9-10	CBB 108	Duong Nguyen
14468	MWF 10-11	F 162	Ziaee
12610	MWF 10-11	AH 106	Chang
12611	MWF 12-1	SEC 203	Safaripoorfatide
12612	MWF 12-1	SEC 202	K Williams
12613	MWF 10-11	SEC 202	Hekmati
14467	Online	www.space.uh.edu	--

Online Recitations (labs)

- If you have a face to face recitation, you do not need to listen. You are welcome to attend the online sessions for extra help but you must attend your face to face times and complete assignments in there.
- For students signed up for online recitation:
 - You must attend two 1.5 hour sessions per week.
 - One session must be between Sunday and Wednesday (inclusive) and one session must be between Thursday and Saturday (inclusive). You do not have to attend the same times every week.
 - Times, session notes, and videos will all be posted on Space (<https://space.uh.edu/>)
- Lab quizzes are only open during online sessions. They will be answered using the EMCF tab on CourseWare. There are no makeups.

CourseWare Accounts

<http://www.casa.uh.edu>

The first portion of these materials is freely available for the first two weeks of class.

All students must purchase a ***Course Access Code*** and enter it on CourseWare by the first day of the third week of class to continue accessing the course learning materials.

A ***Course Access Code*** can be purchased for about \$55 from the University Bookstore.

Here you will find:
**your textbook, exam scheduler,
weekly online quizzes, practice tests, homework upload**

Homework Policy

- All students, regardless of what type of recitation (lab) they have registered for, must submit homework online on CourseWare.
- Homework submitted via email will not be accepted.
- **Late homework will not be accepted.**
- The first homework assignment will be due **Tuesday January 26** in lab.
- Instructions for uploading can be found on the class webpage under **Information for CourseWare and Space**
- Homework is graded out of 10 pts for accuracy. Work must be shown to get credit.

Daily Poppers

Daily quizzes (poppers) will be given in lecture starting the third week of class. You will need to purchase a course pack of custom bubbling forms from the bookstore.

NOTE: Make sure you get the correct packet. They are sold by Section Number. If you don't have the correct section, you will not receive credit.

Do NOT punch holes in the pages

Do NOT use ink

DO fill in all the required bubbles, or you will NOT receive credit.

Online Quizzes

Online quizzes will be given at <http://www.casa.uh.edu> starting today.

You may take them up to 20 times each.

The highest score is recorded.

Watch for when they are to be closed, and don't wait until the last day (or minute) to complete them. The system may become overloaded and thus may prevent you from receiving credit.

Important:

**Once an online quiz closes,
it will NOT reopen.**

There is **NO AMNESTY** at the end of the semester.

It is your responsibility to:

- a) take the quizzes in a timely manner
- b) be aware of open/close dates
- c) realize the quizzes are based on the homework
- d) realize the exams are based on the quizzes.

Four Exams and a Final Exam ...

Exams will be given at CASA.

You can schedule the time of your exam at

<http://www.casa.uh.edu>

The scheduler will be available two weeks prior to the exam.

NO Make up Exams

There is NO Standby testing.

Double check your date and time prior to testing.

You **MUST** have a scheduled time.

Plan on arriving early so if you are “stuck in traffic”, have “overslept”, or “whatever”, you don’t miss the exam.

Grades

Test 1 - 5%

Tests 2, 3, 4 - 15% each

Final exam - 25%

Lab Quizzes - 5%

Homework - 5%

Online Quizzes - 10%

In-class Poppers and Attendance - 5%

Note: The percentage grade on the final exam can be used to replace your lowest test score.

90% and above - A

at least 80% and below 90% - B

at least 70% and below 80% - C

at least 60% and below 70% - D

below 60% - F

Test 1 is available online

starting **TODAY**.

This is a 2 hour timed exam over prerequisite material.

There is a mandatory practice test associated with this test.

The **practice test counts as a quiz grade**, and

Test 1 counts as a major exam.

You have 2 attempts, and these should be more than sufficient to accommodate any internet issues or your need to review material.

Check out the extensive online help material at

<http://online.math.uh.edu>

Attendance and Classroom Behavior...

- Come to class on time.
- Be prepared to start on time.
- Turn off your cell phone.
- Do not read the newspaper, surf the web, or do anything that might disturb other students (including non-calculus discussions).
- Pay attention.
- Ask and answer questions.
- If you must come in late, or leave early, please be respectful of everyone else.

Section 7.1

Integration Review

$$\int x^r dx = \frac{x^{r+1}}{r+1} + C, \quad r \neq -1 \text{ and } r \text{ rational}$$

$$\int x^{2/3}$$

$$dx = \frac{x^{5/3}}{5/3} + C$$

$$\int \sin x dx = -\cos x + C$$

$$\int \cos x dx = \sin x + C$$

$$\int \sec^2 x dx = \tan x + C$$

$$\int \csc^2 x dx = -\cot x + C$$

$$\int \sec x \tan x dx = \sec x + C$$

$$\int \csc x \cot x dx = -\csc x + C$$

$$\int \frac{1}{x} dx = \ln |x| + C$$

$$\frac{3}{5} x^{5/3} + C$$



$$\int e^x dx = e^x + C$$

$$\int \cosh x dx = \sinh x + C$$

$$\int \sinh x dx = \cosh x + C$$

$$\int \frac{1}{1+x^2} dx = \arctan x + C$$

$$\int \frac{1}{\sqrt{1-x^2}} dx = \arcsin x + C$$

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More specifically, the last two for u-sub:

$$\int \frac{1}{a^2 + u^2} du = \frac{1}{a} \arctan\left(\frac{u}{a}\right) + C$$

$$\int \frac{1}{\sqrt{a^2 - u^2}} du = \arcsin\left(\frac{u}{a}\right) + C$$

$$\int \frac{1}{4 + x^2} dx = \frac{1}{2} \arctan\left(\frac{x}{2}\right) + C$$

$$a=2$$

Examples:

$$\star u = (3 - 5x^2)$$
$$du = -10x dx$$

$$\left\{ \frac{du}{dx} = -10 \right\}$$

$$\int 2x\sqrt{3-5x^2} dx$$

$$-\frac{1}{5} \int (-5)(2x) \sqrt{3-5x^2} dx = -\frac{1}{5} \int \sqrt{3-5x^2} (-10x dx)$$

$$= \boxed{-\frac{2}{15} (3-5x^2)^{3/2} + C}$$

$$-\frac{1}{5} \int \sqrt{u} du = -\frac{1}{5} \int u^{1/2} du$$

$$\int \frac{1+2e^x}{e^{3x}} dx = \int \frac{1}{e^{3x}} + \frac{2e^x}{e^{3x}} dx$$

$$= \frac{-1}{3} \int 3e^{-3x} dx + \int 2e^{-2x} dx$$

$$\boxed{-\frac{1}{3} e^{-3x} - e^{-2x} + C}$$

$$\int e^u du = e^u + C$$

$$= -\frac{1}{5} \cdot u^{3/2} \cdot \frac{2}{3} + C$$

$$= -\frac{2}{15} u^{3/2} + C$$

$$\int \frac{\sqrt{\tan x} \sec^2 x dx}{du}$$

$$u = \tan x$$
$$du = \sec^2 x dx$$

$$\int \sqrt{u} du = \int u^{1/2} du = \frac{2}{3} u^{3/2} + C$$

$$= \frac{2}{3} (\tan x)^{3/2} + C$$

$$\frac{1}{2} \int \frac{2t}{\sqrt{1-t^4}} dt$$

$(t^2)^2$

~~$$u = 1 - t^4$$
$$du = -4t^3 dt$$~~

$$\int \frac{1}{\sqrt{1-u^2}} du$$
$$= \arcsin u + C$$

$$u = t^2 \quad du = 2t dt$$

$$\frac{1}{2} \int \frac{du}{\sqrt{1-u^2}} = \frac{1}{2} \arcsin u + C \rightarrow \boxed{\frac{1}{2} \arcsin t^2 + C}$$

$$\int_1^9 \frac{x-2}{\sqrt{x+3}} dx$$

$$u = x + 3$$
$$du = dx$$

$$\int \frac{\textcircled{x} - 2}{\sqrt{u}} du$$

$$x = 1 \rightarrow u = 1 + 3 = 4$$

$$\rightarrow x = \textcircled{u - 3}$$

$$\int_4^{12} \frac{u - 3 - 2}{u^{1/2}} du$$

$$x = 9 \rightarrow u = 9 + 3 = 12$$

$$\left. \frac{2}{3} u^{3/2} - 10 u^{1/2} \right|_4^{12}$$

$$\int_4^{12} \frac{u - 5}{u^{1/2}} du$$

$$\left(\frac{2}{3} (12)^{3/2} - 10 (12)^{1/2} \right)$$
$$- \left(\frac{2}{3} (4)^{3/2} - 10 (4)^{1/2} \right)$$

$$\int_4^{12} \frac{u}{u^{1/2}} - \frac{5}{u^{1/2}} du$$

$$\int_4^{12} u^{1/2} - 5 u^{-1/2} du$$

$$\frac{2}{3} u^{3/2} - 10 u^{1/2}$$

$$\int \frac{2x+1}{9+16x^2} dx = \frac{1}{16} \int \frac{32x}{9+16x^2} dx + \int \frac{1}{9+16x^2} dx$$

u-sub.

$$u = 9 + 16x^2$$

$$du = 32x dx$$

$$\frac{1}{16} \int \frac{du}{u}$$

$$\frac{1}{16} \ln|u|$$

arctan

$$\frac{1}{4} \int \frac{4}{3^2 + (4x)^2} dx$$

$$a=3 \quad u=4x \quad du=4dx$$

$$\frac{1}{4} \int \frac{du}{a^2 + u^2} = \frac{1}{4} \cdot \frac{1}{a} \arctan \frac{u}{a}$$

$$\frac{1}{16} \ln(9+16x^2) + \frac{1}{12} \arctan\left(\frac{4x}{3}\right) + C$$

$$\frac{1}{2} \int_0^1 \frac{2x}{x^2+4} dx$$

u sub.

$$u = x^2 + 4$$

$$du = 2x dx$$

$$x=0 \rightarrow u=4$$

$$x=1 \rightarrow u=5$$

$$\frac{1}{2} \int_4^5 \frac{1}{u} du = \frac{1}{2} \ln|u| \Big|_4^5$$

$$= \frac{1}{2} \ln 5 - \frac{1}{2} \ln 4$$

$$\int e^{3x} \sqrt{e^x + 1} dx$$

Friday

Take practice test 1 SOON!

Topics:

- Limits
- Continuity
- Definition of derivatives
- Derivatives
- Mean Value Theorem
- Inverses and their derivatives
- Implicit differentiation
- Related rate word problems
- Optimization word problems
- Graphs of derivatives
- Extreme values and concavity
- Integration