MA 243-08   Calculus III

Thomas' Calculus (Early Transcendentals)
     by Hass, Heil and Weir

Instructor : Dr. E. Jacobs

Office : COAS 301.36

Office Hours
Mon, Wed, Fri.: 2:00 - 2:30 and 4:15 - 4:45 PM
and Tues: 2:00 - 3:00 PM

e-mail: jacobs50@xecu.net

Class Meeting Times

MWF at 3:00 - 3:50 in COAS 405
and Tues at 3:45 - 5:00 in COAS 404

Grading System

Exam Average	85%
Homework Average	15%

There will be four exams, all equally weighted.
Exam 4 will be the final exam.

Overall Average	Grade in Course
90 - 100	**A**
80 - 89	**B**
70 - 79	**C**
60 - 69	**D**
0 - 59	**F**

Some important dates:

Exam 1	Tuesday, February 11
Assignment 1	Monday, January 13

Rules for Exams

1. You may not have formulas or notes with you on exams.

2. Put away cell phones and smart watches during exams.

3. Make-up exams will only be given for in very special circumstances. Arrangements for a make-up exam must be made within 24 hours of the original exam.

Homework

1. Homework must be neat. Show work.
2. Upload to Canvas in .pdf format
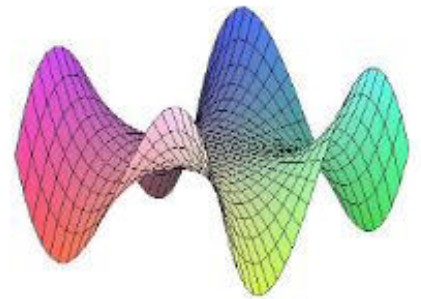3. Homework must be handed in on time.

MA 243

- [Syllabus](#) ⬇
- [Welcome to Calculus III](#)
- [Homework problems](#) ⬇
- How to upload your homework
- [How to use Camscanner](#)
- [Office hours](#)

Modules

- 1. [Module 1](#) - Surfaces and vectors
- 2. [Module 2](#) - Partial derivatives and double integrals
- 3. [Module 3](#) - Double and triple integrals
- 4. [Module 4](#) - Max-min problems
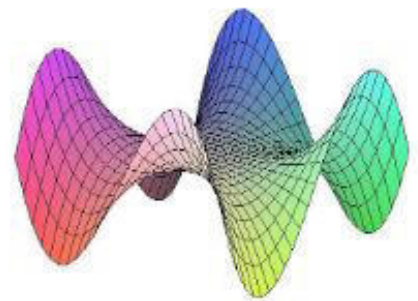
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Modules

- 1. Module 1 - Surfaces and vectors
- 2. Module 2 - Partial derivatives and double integrals
- 3. Module 3 - Double and triple integrals
- 4. Module 4 - Max-min problems

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SHOW BY DATE

▾ **Upcoming Assignments**

Assignment 1
Available until Sep 13 at 9:00pm | Due Sep 6 at 11:59pm

Assignment 2
Available until Sep 23 at 11:59pm | Due Sep 10 at 9pm | -/100 pts

Assignment 3
Available until Sep 17 at 11:59pm | Due Sep 13 at 9pm | -/100 pts

Assignment 4
Available until Sep 19 at 11:59pm | Due Sep 17 at 9pm | -/100 pts

Exam 1
Not available until Sep 21 at 5:00pm | Due Sep 21 at 5:50pm | -/100 pts

Assignment 5
Available until Oct 2 at 11:59pm | Due Sep 27 at 9pm | -/100 pts

Assignment 1

Due: Tue Sep 6, 2022 11:59pm

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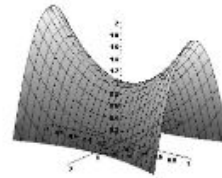| Attempt 1	∨	◯ **IN PROGRESS** Next Up: Submit Assignment

Unlimited Attempts Allowed
Available: Jul 1, 2022 12:00am until Sep 13, 2022 9:00pm

∨ Details

Spheres and other surfaces

You may begin this assignment after the second day of class. Click here: Assignment 1 ↓

to see what the problems are on this assignment. Write your solutions neatly and clearly on paper. Then, sc
and upload in pdf format.

Choose a submission type

↑ Upload	⚡ Studio

Sub

MA 243 Calculus III Assignment 1. *Spheres and Other Surfaces*

Read 12.1 and 12.6
You should be able to do the following problems:
Section 12.1/Problems 51 - 64   Section 12.6/Problems 1 - 44
Hand in the following problems:

1.   The following equation describes a sphere. Find the radius and the coordinates of the center.

$$x^2 + y^2 + z^2 = 2(x + y + z) + 1$$

2.   A particular sphere with center $(-3, 2, 2)$ is tangent to both the xy-plane and the xz-plane. It intersects the xy-plane at the point $(-3, 2, 0)$. Find the equation of this sphere.

3.   Suppose $(0, 0, 0)$ and $(0, 0, -4)$ are the endpoints of the diameter of a sphere. Find the equation of this sphere.

4.   Find the equation of the sphere centered around $(0, 0, 4)$ if the sphere passes through the origin.

Sketch each of the following surfaces

5. $z = \sqrt{1 - x^2 - y^2}$

6. $z = 4 - 2x - y^2$

7. $z = 1 - y^2$

8. $z = 4 - x - y$

9. $z = 4 - x^2 - y^2$

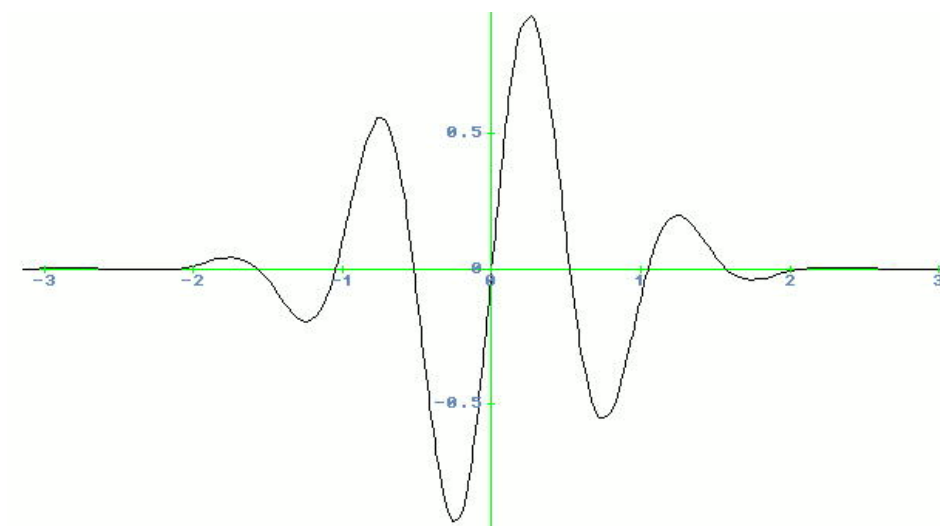**10.** $x^2 + z^2 = 16$

Attendance

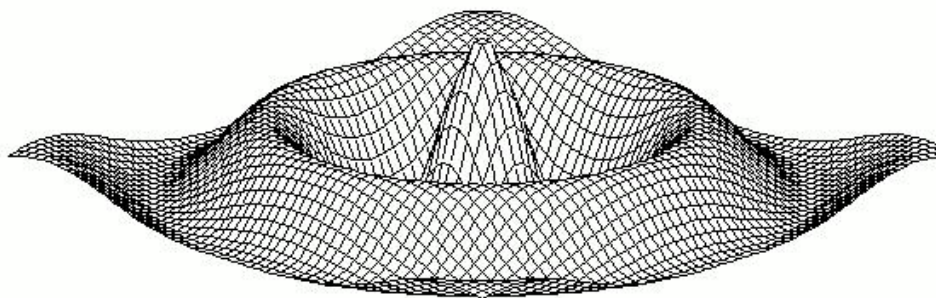Attendance is not counted in your grade in the course except for borderline cases.

First Year Calculus
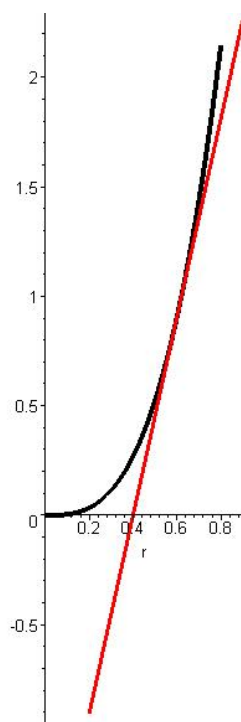# Functions of one variable
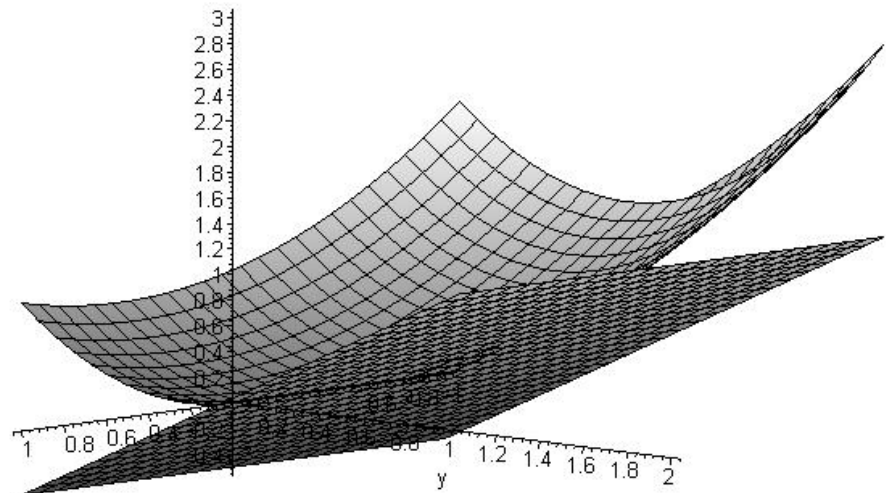$$y = f(x)$$

Multivariate Calculus

$$z = f(x, y)$$

First Year Calculus
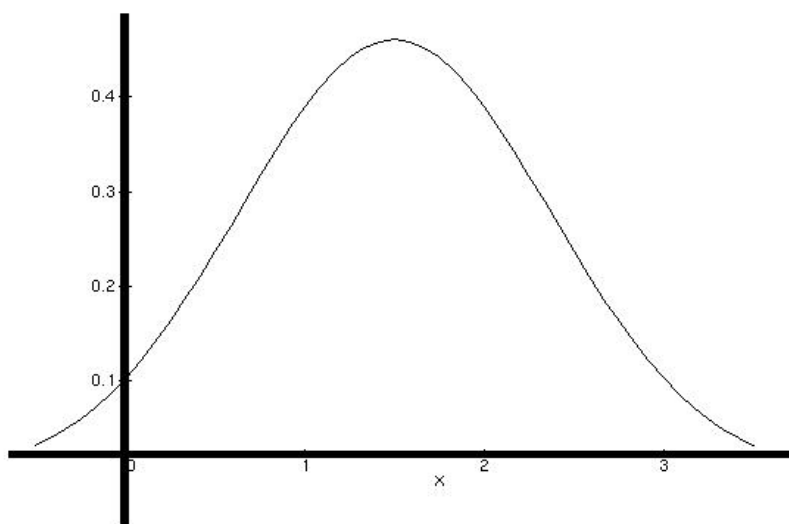## The derivative is the slope of a tangent line

Multivariate Calculus
The derivative is the slope of a tangent plane

First Year Calculus
The integral is the area under a curve

Multivariate Calculus
A double integral is the volume under a surface