Math 2401 Information

Professor: John Etnyre
Office: Skiles 106
Phone: 404.385.6760
Fax: 404.894.4409
e-mail: etnyre "at" math.gatech.edu

Office Hours: Tuesday and Thursday from 11-12.

Lectures: TTh 9:35-10:55 in Howey Physics L3

Recitation Sessions: MW 11:05-11:55

- Section D1 (81156) in Skiles 169
  TA: Blackili Milhose
  e-mail: blacki@gatech.edu
  Office: Skiles 230
  Office: Friday 11-12
- Section D2 (84563) in Skiles 154
  TA: Kun Zhao
  e-mail: kzhao@math.gatech.edu
  Office: Skiles 162
  Office Hours: Tuesday and Thursday 11-12
- Section D3 (81962) in Skiles 243
  TA: Lacy Hardcastle
  e-mail: hardcastle@math.gatech.edu
  Office: Skiles 140
  Office Hours: Monday and Wednesday 9-10
- Section D4 (81152) in Skiles 270
  TA: Nathanael Berglund
  e-mail: berglund@math.gatech.edu
  Office: Skiles 142

Textbook

The textbook for the course is "*Calculus: one and several variables*" (tenth edition), by Salas, Hille and Etgen. We will more or less cover chapters 14-18 in the book. The book does note cover several important concepts very well (or at all). For these parts of the course the material will be thoroughly covered in the lectures (so while attendance is not mandatory it is very important). Basically, I view the book as a good reference and some of the homework problems will be taken from the book, but the tests will be based on what is covered in class and on the homework assignments.

Grading Policy

The course grade will be based on the following.

Homework: 20%
Two Midterms: 25% each
Final Exam: 30%

Homework Policy

Homework Policy

Each Tuesday I will assign several homework problems. They will be due on Wednesday of the following week and should be turned in to your TA during your recitation session. **No late homeworks will be accepted.**

Homework counts for 20% of the final grade. The lowest two homework score will be dropped. This is intended to take care of extraordinary circumstances: I was really sick; the dog ate my homework; I was abducted by aliens.

Exam Information

Midterm 1 is **tentatively** scheduled for Thursday, September 18
Midterm 2 is **tentatively** scheduled for Thursday, October 23

Final Exam is **tentatively** scheduled for Tuesday Dec 9th, 8:00 - 10:50

Showing up for the exams is the most basic requirement of the course. If there is an absolutely unavoidable conflict, you may discuss the matter with me, but you must do so well **in advance**.

home

SYLLABUS

Calculus III (Math 2401 L) Fall 2008, Georgia Tech

Lecture	Recitations
T TH 3:05-4:25 Howey Physics L3	L1: M W 3:05-3:55 pm Skiles 268 L2: M W 3:05-3:55 pm Skiles 270 L3: M W 3:05-3:55 pm Skiles 256 L4: M W 3:05-3:55 pm Skiles 243

Instructor

Professor Mohammad Ghomi

- *Office:* Skiles 203
- *Office hours:* T Th 1:30-2:30
- *Email:* ghomi@math.gatech.edu
- *Course Web Page:* www.math.gatech.edu /~ghomi/Classes/Math4441

Teaching Assistants

- L1: Jinyong Ma, jma@math.gatech.edu
- L2: Samuel Tettner, tettner@gmail.com
- L3: Yun Gong, ygong@math.gatech.edu
- L4: Giang Do, gdo@math.gatech.edu

Course Description

We study calculus of vector valued functions. Main topics include Taylor's theorems, Lagrange multipliers and constrained optimization, parametrized curves and surfaces, change of variables formula and Jacobians, line and path integrals, surface integrals, theorems of Green, Gauss, Stokes, differential forms, and various applications to problems in Physics, Engineering, and Geometry.

Prerequisites

Math 1502

Textbooks

Calculus, *One and Several Variables*, by Salas, Hille, and Etgen (Tenth Edition); John Wiley and Sons, Inc., 2007, and *Linear Algebra* by Carlen and Carvalho, W. H. Freeman & Sons, Inc. 2007.

Lecture and Reading Schedule

We will study chapters 13 to 18 of the text.

Topic	Chapters	Weeks
Review of Vectors, Dot Product, and Cross Product	13	1
Vector valued functions, curves, and motion	14	2
Functions of several variables, Partial derivatives	15	2
Grandients and Optimization Problems	16	3
Double and Triple Integrals	17	3
Line and Surface Integrals, Stokes Theorem	18	4

Topic	Chapters	Weeks
Review of Vectors, Dot Product, and Cross Product	13	1
Vector valued functions, curves, and motion	14	2
Functions of several variables, Partial derivatives	15	2
Grandients and Optimization Problems	16	3
Double and Triple Integrals	17	3
Line and Surface Integrals, Stokes Theorem	18	4

Homeworks and Quizzes

There will be homework assignments due every Wednesday. *Late Homeworks will not be accepted.* Also there will be quizzes every Monday (on the previous weeks homework).

Assignments

#	Due Date	Problems
1	Aug 27	13.1) 2, 12, 18; 13.2) 2, 6, 14, 19, 26, 30, 31, 40; 13.3) 2, 8, 11, 40, 41, 46, 47, 48; 13.4) 2, 22, 24, 28, 37, 40, 47; 13.5) 2, 4, 10, 22, 34; 13.6) 4, 6, 16, 28.
2	Sep 3	14.1) 10, 16, 30, 42; 14.2) 8, 22, 32, 33; 14.3) 14, 22, 33, 34, 36; 14.4) 2, 16, 18, 22, 24.
3	Sep 10	14.5) 2, 6, 11, 12, 14, 32, 50, 52; 14.6) 4, 5, 6, 10, 11, 15; 14.7) 1, 2.
4	Sep 17	15.1) 2, 4, 32, 35; 15.2) 16, 20, 26, 28, 30, 44; 15.3) 2, 8, 20, 22, 37; 15.4) 2, 6, 18, 50, 56.
5	Sep 24	15.6) 2, 4, 18, 23, 26, 29, 30; 16.1) 4, 6, 10, 33, 34, 42, 43; 16.2) 2, 4, 10, 24, 32, 33, 34, 40.
6	Oct 1	16.3) 6, 8, 10, 20, 25, 26, 36, 45, 47, 52; 16.4) 10, 12, 32, 34; 16.5) 6, 12, 28, 30.
7	Oct 8	16.6) 2, 6, 16, 20, 26, 32; 16.7) 2, 12, 28, 30, 33; 16.8) 2, 18, 22, 26, 30, 34, 38.
8	Oct 15	17.1) 2; 17.2) 2, 4, 10, 14; 17.3) 4, 11, 14, 20, 33, 35, 38; 17.4) 4, 6, 10, 14, 24, 30.
9	Oct 22	17.5) 4, 8, 29, 31, 34; 17.7) 6, 19, 22, 26, 28, 34, 40, 46, 48.
10	Oct 29	17.8) 8, 10, 12, 22, 26, 27, 35, 36; 17.9) 2, 12, 14, 16, 32, 34; 17.10) 2, 8, 10, 11, 14, 20, 27.

11	Nov 5	18.1) 4, 8, 19, 31; 18.2) 2, 6, 21, 27; 18.3) 1, 4, 7, 8, 9.
12	Nov 12	18.4) 5, 6, 7, 17, 18, 19, 28, 29; 18.5) 2, 10, 17, 19, 27, 35.
13	Nov 19	18.6) 2, 6, 7, 15, 16, 18, 20, 30; 18.7) 2, 8, 17, 18, 19, 22, 32.
14	Nov 26	18.8) 2, 4, 16, 19, 22; 18.9) 2, 4, 6, 9, 10, 15, 16, 17, 22.
15	Dec 3	18.10) 2, 6, 8, 11, 12, 14, 15, 16.

Attendance Policy

All students are required to attend all lectures and recitations.

Grading

The grade is based on homeworks (10%); quizes (10%); two midterms (20% each) on Mondays Sep 22, and Nov 3; and a final exam (40%) on Thursday, Dec 11, 11:30-2:20.

How to Succeed in this class

Attend all lectures and recitations, and start working on each homework assigment well in advance of its due date.

SYLLABUS

Calculus III (Math 2401 M) Fall 2012, Georgia Tech

Lecture	Recitations
M W 3:05-4:25 Howey Physics L3	M1: T R 3:05-3:55 pm Skiles 271 M2: T R 3:05-3:55 pm Skiles 270 M3: T R 3:05-3:55 pm Skiles 249 M4: T R 3:05-3:55 pm Engr Science 201

Instructor

Professor Mohammad Ghomi

- *Office:* Skiles 203
- *Office hours:* T Th 2:00-3:00
- *Email:* ghomi@math.gatech.edu
- *Course Web Page:* people.math.gatech.edu/~ghomi/Classes/Math2401Spring2012

Teaching Assistants

- M1: Santhosh Karnik, skarnik1337@gatech.edu
- M2: Wuchen Li, wli83@math.gatech.edu
- M3: Himanshu Sahni, hsahni3@math.gatech.edu
- M4: Suo Yang, syang305@math.gatech.edu

Course Description

We study calculus of vector valued functions. Main topics include Taylor's theorem, Lagrange multipliers and constrained optimization, parametrized curves and surfaces, change of variables formula and Jacobians, line and path integrals, surface integrals, theorems of Green, Gauss, Stokes, and various applications to problems in Physics, Engineering, and Geometry.

Prerequisites

Math 1502

Textbooks

Calculus, *One and Several Variables*, by Salas, Hille, and Etgen (Tenth Edition); John Wiley and Sons, Inc., 2007.

Lecture and Reading Schedule

We will study chapters 13 to 18 of the text, according to the following (tentative) schedule:

Topic	Chapters	Weeks
Review of Vectors, Dot Product, and Cross Product	13	1
Vector valued functions, curves, and motion	14	2
Functions of several variables, Partial derivatives	15	2
Grandients and Optimization Problems	16	3
Double and Triple Integrals	17	3
Line and Surface Integrals, Stokes Theorem	18	4

Homeworks and Quizzes

Homeworks and Quizzes

There will be homework assignments due every Tuesday, although they will not be collected. Also there will be quizzes every Thursday (on the previous Tuesday's homework).

Assignments

#	Due Date	Problems
1	Jan 17	13.1) 2, 12, 18; 13.2) 2, 6, 14, 19, 26, 30, 31, 40; 13.3) 2, 8, 11, 40, 41, 46, 47, 48; 13.4) 2, 22, 24, 28, 37, 40, 47; 13.5) 2, 4, 10, 22, 34; 13.6) 4, 6, 16, 28.
2	Jan 24	14.1) 10, 16, 30, 42; 14.2) 8, 22, 29, 32, 33; 14.3) 14, 22, 33, 34, 35, 36; 14.4) 2, 16, 18, 21, 22, 24.
3	Jan 31	14.5) 2, 6, 11, 12, 14, 32, 50, 52; 14.6) 4, 5, 6, 10, 11, 15; 14.7) 1, 2.
4	Feb 7	15.1) 2, 4, 32, 33, 34, 35; 15.2) 16, 20, 26, 30, 44; 15.3) 2, 8, 20, 22, 37; 15.4) 2, 6, 18, 50, 55.
5	Feb 14	15.6) 2, 4, 18, 23, 26, 29, 30; 16.1) 4, 6, 10, 33, 34; 16.2) 2, 4, 10, 24, 32, 33, 34, 40.
6	Feb 21	TBA
7	Feb 28	TBA
8	Mar 6	TBA
9	Mar 13	TBA
10	Mar 27	TBA
11	Apr 3	TBA
12	Apr 10	TBA
13	Apr 17	TBA
14	Apr 24	TBA

Attendance Policy

All students are required to attend all lectures and recitations.

Grading

The grade is based on quizes (15%); two midterms (20% each) on Thursdays Feb 16, and March 29; and a final exam (45%) on Friday, May 4, 2:50-5:40.

How to Succeed in this class

Attend all lectures and recitations, and start working on each homework assigment well in advance of its due date.

Mathematics 2401   Calculus III   Course Description

Fall, 2008 (MW 4:35 in the <u>D.M. Smith Building</u>, room 105, with recitations TTh)

Instructor: Evans Harrell, Office Skiles 218D, 894 3300, <u>harrell at math.gatech.edu</u>
Instructor's office periods: Wednesdays, 1:30-2:30 pm. Ordinally I will also be available for 20 miniutes after each class.
Recitations:

1. Meets TTh 5:00 in Skiles 249 with <u>Jinyong Ma</u>, 404 894 2695. (<u>send mail</u>); Office periods: M12 in Skiles 127A.
2. Meets TTh 5:00 in Skiles 254 with <u>Maria Reguera-Rodriguez</u>, 404 385 7497. (<u>send mail</u>); Office periods: W11 in Skiles 146B.
3. Meets TTh 5:00 in Skiles 270 with <u>Alan Diaz</u>, 404 385 3838. (<u>send mail</u>); Office periods: TBA in Skiles 153.

Class web page

The class will be coordinated through <u>T-Square</u>, but you can also consult the <u>Class web page</u> directly. It is your responsibility to consult <u>T-Square</u> or the web page regularly for information about the class, such as homework assignments. You will also be in e-mail contact with the instructor and the teaching assistants, and we will do our best to respond to your questions.

Required texts

Salas, Hille, and Etgen, *Calculus*, and on-line materials, which may be linked to from the class website or T-Square (<u>Secton T1</u> / <u>Secton T2</u> / <u>Secton T3</u>)

Description: Calculus is not only essential in engineering; it is one of mankind's greatest intellectual achievements. After thousands of years of confusion on the part of philosophers, Newton, Leibniz, and Euler created the tools for understanding the infinite and the infinitesimal. In the third term we learn about derivatives and integrals in three (or even more) dimensions and their uses.

Grading and requirements

There will be tests in the recitations on

1. **Thursday, 4 September**,
2. **Thursday, 25 September**,
3. **Thursday, 23 October**,
4. **Thursday, 20 November**,

There will also be a final exam, of course. Homework will not be systematically collected, but instead clones of the homework problems will appear on short quizzes, given most Thursdays. Your quiz average will incorporate at least two drops. In addition, Prof. Harrell may announce occasional contests, and the winner of a contest will receive a small number of extra-credit points.

Students' grades will depend on the following quantity:

```
(T1  + T2  + T3  + T4 + Q  + F  - min(T1..T4,F) )    + E + F/2
```

where the components of this formula correspond to the ingredients mentioned above, after scaling so that all of them except E = extra credit total have a common median of 70. The drop in the formula is the *only* mechanism for coping with personal events such as illness and family emergencies. **There will be no opportunities for make-up tests after the fact. In the event of an absence due to travel representing Georgia Tech, such as an intercollegiate sports competition, you must <u>notify the professor</u> at least two weeks in advance** to arrange an early test or other alternative. Otherwise, such absences will be treated as personal.

Calculators and tests

No restrictions will be placed on the use of calculators that do *elementary* mathematics on the tests. **Calculators that can**

No restrictions will be placed on the use of calculators that do *elementary* mathematics on the tests. **Calculators that can do calculus symbolically shall not be brought to tests**. No credit will be given on tests for a correct answer without the intermediate steps.

Readings

The schedule of reading will be posted on the 2401 assignments page and on T-Square. The subject matter covered will be roughly the following:

> Parametrized paths, velocity and acceleration, curvature and arclength
> Continuity, etc. for functions of several variables. Graphs and contour plots
> Partial derivatives and the chain rule. Taylor's theorem in several variables
> The gradient, tangent planes, best linear approximation and best quadratic approximation
> Optimization, types of critical points
> Lagrange multipliers, Newton's method in several variables
> Double integrals, iterated integrals. Applications: area, center of mass, and volume by Pappus's Theorem
> Area integrals in polar coordinates, general coordinates and the Jacobian in the plane
> Triple integrals, spherical and cylindrical coordinates
> Jacobian in three variables. Improper multiple integrals and applications
> Vector fields and line integrals, work and flux
> Green's theorem in the plane for both work and flux integrals. Exact vector fields
> Parameterized surfaces and surface integrals
> Gauss's Theorem and Stokes's Theorem
> Applications

On-line materials

This course will benefit from occasional on-line materials, which may require the software in the student software suite, especially Netscape, Maple, and Acrobat. There is a home page for the class at http://www.math.gatech.edu/~harrell/2401/, and there are many other useful things you can find in the School of Mathematics Core Curriculum Materials.

Scientists and Engineers today do mathematics differently than in the past. Complicated calculations can be done with software such as Maple, Mathematica, or Matlab, and there are many powerful items on the World Wide Web to help you both to learn mathematics and to do it effectively. We hope that you will use software and the Internet to help with calculations and learning, but always remember that real understanding requires you to exercise your mind as well as your fingers.

Learning Disabilities

It is the right of any student with a certified learning disability to request necessary accommodation. Such requests must be made well in advance of the time that the accommodation is required and a letter of documentation from the ADAPTS office must be presented at the time of any request.

Academic Honesty

It is expected that all students are aware of their individual responsibilities under the Georgia Tech Academic Honor Code, which will be strictly adhered to in this class.

Return to the 2401 class web page

Mathematics 2401   Calculus III   Course Description

Fall, 2007 (MWF 9:00 in the Skiles Building, room 249, with recitations TTh 9:00)

Instructor: Evans Harrell, Office Skiles 218D, 894 3300, harrell at math.gatech.edu
Instructor's office periods: MF 10:00
Assistants:

1. Yan Shu (send mail);
   Office periods: TTh 10:00-11:00.
2. Marc Sedjro (send mail)
   Office periods: TTh 10:00-11:00.

Class web page

The class will be coordinated through T-Square, but in the transition period you can also consult the Class web page directly. It is your responsibility to consult T-Square or the web page regularly for information about the class. The web page will contain the definitive information about the class, such as homework assignments. Either will also give you e-mail contact with the instructor and the teaching assistants, and we will do our best to respond to your questions.

Required texts

Salas, Hille, and Etgen, *Calculus*, and on-line materials, which may be linked to from the class website or T-Square (Secton N1 / Secton N2). **Description**: Calculus is not only essential in engineering; it is one of mankind's greatest intellectual achievements. After thousands of years of confusion on the part of philosophers, Newton, Leibniz, and Euler created the tools for understanding the infinite and the infinitesimal. In the third term we learn about derivatives and integrals in three (or even more) dimensions and their uses.

Grading and requirements

There will be in-class tests on

1. **Monday, 10 September**,
2. **Wednesday, 3 October**,
3. **Monday, 29 October**,
4. **Monday, 19 November**,

There will also be a final exam, of course. Homework will not be systematically collected, but instead clones of the homework problems will appear on short quizzes, given most Thursdays. Your quiz average will incorporate at least two drops. In addition, Prof. Harrell may announce occasional contests, and the winner of a contest will receive a small number of extra-credit points.

Students' grades will depend on the following quantity:

```
 (T1  + T2  + T3  + T4 + Q  + F  - min(T1..T4,F) )    + E + F/2
```

where the components of this formula correspond to the ingredients mentioned above, after scaling so that all of them except E = extra credit total have a common median of 70. The drop in the formula is the *only* mechanism for coping with personal events such as illness and family emergencies. **There will be no opportunities for make-up tests after the fact. In the event of an absence due to travel representing Georgia Tech, such as an intercollegiate sports competition, you must notify the professor at least two weeks in advance** to arrange an early test or other alternative. Otherwise, such absences will be treated as personal.

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No restrictions will be placed on the use of calculators that do *elementary* mathematics on the tests. **Calculators that can do calculus symbolically shall not be brought to tests**. No credit will be given on tests for a correct answer without the intermediate steps.

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Readings

The schedule of reading will be posted on the 2401 assignments page and on T-Square. The subject matter covered will be roughly the following:

> Parametrized paths, velocity and acceleration, curvature and arclength
> Continuity, etc. for functions of several variables. Graphs and contour plots
> Partial derivatives and the chain rule. Taylor's theorem in several variables
> The gradient, tangent planes, best linear approximation and best quadratic approximation
> Optimization, types of critical points
> Lagrange multipliers, Newton's method in several variables
> Double integrals, iterated integrals. Applications: area, center of mass, and volume by Pappus's Theorem
> Area integrals in polar coordinates, general coordinates and the Jacobian in the plane
> Triple integrals, spherical and cylindrical coordinates
> Jacobian in three variables. Improper multiple integrals and applications
> Vector fields and line integrals, work and flux
> Green's theorem in the plane for both work and flux integrals. Exact vector fields
> Parameterized surfaces and surface integrals
> Gauss's Theorem and Stokes's Theorem
> Applications

On-line materials

This course will benefit from occasional on-line materials, which may require the software in the student software suite, especially Netscape, Maple, and Acrobat. There is a home page for the class at http://www.math.gatech.edu/~harrell/2401/, and there are many other useful things at the School of Mathematics page for on-line resources: http://www.math.gatech.edu/~bourbaki/.

Scientists and Engineers today do mathematics differently than in the past. Complicated calculations can be done with software such as Maple, Mathematica, or Matlab, and there are many powerful items on the World Wide Web to help you both to learn mathematics and to do it effectively. We hope that you will use software and the Internet to help with calculations and learning, but always remember that real understanding requires you to exercise your mind as well as your fingers.

Learning Disabilities

It is the right of any student with a certified learning disability to request necessary accommodation. Such requests must be made well in advance of the time that the accommodation is required and a letter of documentation from the ADAPTS office must be presented at the time of any request.

Academic Honesty

It is expected that all students are aware of their individual responsibilities under the Georgia Tech Academic Honor Code, which will be strictly adhered to in this class.

Return to the 2401 class web page

Math 2401 E – Calculus III
Lectures: MWF 12:05 – 12:55 in Howey (Physics), room L4

Instructor: Plamen Iliev
E-mail: iliev@math.gatech.edu (I can answer only if you use your GT account!)
Office hours: MW 13:05-13:55am in Skiles 243B

Teaching assistants & Recitations:

Section:	TA	Recitations: TuTh 13:05-13:55	Office hours
E1	Jamie Conway E-mail: conway@ math.gatech.edu	Skiles 154	Tu 4-5 Skiles 146B
E2	Thao Vuong E-mail: tvuong@ math.gatech.edu	Instr. Center 219	Tu 3-4 Skiles 138A
E3	Todd Shayler E-mail: tshayler3@ math.gatech.edu	Skiles 270	Tu 2-3 Skiles 146A
E4	Renee Franklin E-mail: rfranklin@ gatech.edu	Bunger-Henry 413	Th 12-1 Skiles 230
E5	Chris Pryby E-mail: cpryby@gatech.edu	Skiles 171	M 3-4, Tu 12-1 Skiles 151

Textbook: *Calculus, One and Several Variables*, by Salas, Hille, and Etgen (tenth edition); John Wiley and Sons, Inc.

Prerequisite: Calculus II

Prerequisite: Calculus II

Syllabus: We will cover the material in chapters 14 through 18 from the textbook.
- Vector calculus (Chapter 14);
- Functions of several variables (Chapter 15);
- Gradients; extreme values (Chapter 16);
- Double and triple integrals (Chapter 17);
- Line and surface integrals (Chapter 18);

Grading policy: There will be two tests, quizzes and a comprehensive final exam. Any missed exam results in a "0" score. The lowest quiz score will be dropped. Grades will be computed by the following distribution:

Quizzes	20%
Test 1	20%
Test 2	20%
Final exam	40%

No make-up exams. If you have to miss an hour test for a valid reason (illness or emergency) please let me know as soon as possible. Contact also the Office of Dean of Students immediately and let them send me a notice. In that case the final exam will be given a higher weight.

Test dates:
- Test 1 - Thursday, September 22, 2011
- Test 2 - Thursday, November 17, 2011
- Final exam – Wednesday, December 14, 2011, 11:30am-2:20pm.

Please let me know of any conflicts with the test dates immediately.

Policy on the 2 tests and quizzes: Notes, books, calculators, laptops, cell phones, ipods etc. cannot be used during the midterm tests and quizzes.
For the final exam you can bring a one-page (one side only!) formula sheet with you. Write your name and GTID on it. You will have to staple it to your final exam.
Bring an ID for all exams!

Useful links:
- ?   **Tutors and Labs** (note that the School of Math offers free help in the Math Lab!)
- ?   **Official School Calendar**

Calculus III, Math 2401
Course Syllabus
Spring Semester 2011

Instructor: Andrzej Swiech
Lectures: MWF 12:05-12:55 pm, Howey (Physics) L2
Office: Skiles 235B
Office Hours: M 2:00-3:00 pm, T 3:00-4:00 pm, W 1:00-2:00 pm
Phone: (404) 894-2705
E-mail: swiech@math.gatech.edu

Course web page: http://www.math.gatech.edu/∼swiech/2401.html

Recitations:
E1, Tobias Hurth (thurth3@math.gatech.edu), TR 12:05-12:55 pm, Skiles 169
E2, Stas Minsker (sminsker@math.gatech.edu), TR 12:05-12:55 pm, Skiles 254
E3, Maria Reguera (mreguera@math.gatech.edu), TR 12:05-12:55 pm, Skiles 170
E4, Greg Douthit (douthitjg@gmail.com) TR 12:05-12:55 pm, Skiles 154

Math Lab: Skiles 257

Textbook: Salas, Hille and Etgen, *Calculus, one and several variables*, 10th edition, John Wiley and Sons, Inc.

Course Description: The course introduces the students to functions of several variables and vector analysis. The detailed description of the topics to be covered is the following:

1. Vector calculus, parametric curves and motion, Sections 14.1-14.7, 7 lectures.
2. Functions of several variables, visualization and partial differentiation, Sections 15.1-15.6, 6 lectures.
3. Gradients, optimization, differentials, Sections 16.1-16.9, 10 lectures.
4. Double and triple integrals, Sections 17.1-17.10, 10 lectures.
5. Vector analysis - line integrals, surface integrals, and the theorems of Green, Gauss, and Stokes, Sections 18.1-18.10, 10 lectures.

Grading: There will be three tests (February 7, March 7, and April 11), homework assignments, and the final exam. Your final score will be scaled to 100% and calculated according to the following rule: Homework will count for 20% of the final score, each test for 15%, and the final exam for 35%. You will get an A, respectively B, C, and D if your final score is greater than 85%, respectively 70%, 55%, and 40%. These requirements may be lowered if the overall average score of the class is low (i.e. your grade may get curved up).

Homework: Homework will be collected every other week on Thursdays in recitations and will be graded by the TA. You are required to do all assigned problems however

only selected problems will be graded. Please check the news and announcements section of the course web page for the precise information about what is due and when. Late homework will not be accepted however the worst homework score will be dropped so you can even miss one assignment.

Free tutorial help is available in the Math Lab, Skiles 257. The Math Lab is staffed by graduate and senior teaching assistants.

Please be aware of the Georgia Tech Honor Code and follow it carefully. In particular please make sure that all the work you submit is your own.

The Georgia Institute of Technology
Fall 2009
Math 2401 - Calculus III
Lecture: Room: Howey (Physics) L4 - Time: TTH 12:05pm – 1:25pm
Recitation (F1): Room: Skiles 170 - Time: MW 1:05pm – 1:55pm
Recitation (F2): Room: Skiles 240 - Time: MW 1:05pm – 1:55pm
Recitation (F3): Room: Skiles 246 - Time: MW 1:05pm – 1:55pm

Instructor: Brett D. Wick   Office: Skiles 224
Office Phone: 404-864-4311   Office Hours: T/W/TH 11:00am – 12:00pm
Email: wick@math.gatech.edu   or by appointment
Webpage: http://people.math.gatech.edu/∼bwick6/math2401.html

Teaching Assistants:

Section (F1): Armen Vagharshakyan   Office: Skiles 162
Office Phone: 404-894-0617   Office Hours: TBA
Email: armenv@math.gatech.edu

Section (F2): Linwei Xin   Office: Skiles 146B
Office Phone: 404-385-7497   Office Hours: W 11:00am – 12:00pm
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Section (F3): Tianjun Ye   Office: Skiles 140
Office Phone: 404-385-7525   Office Hours: TBA
Email: maolilan@math.gatech.edu

Text: The following text is required for the course:

Title: "Calculus: One & Several Variables"

Authors: Salas, Hille, and Etgen

Publisher: John Wiley and Sons

Edition: 10th

Prerequisite and Description: Math 2401 is an introduction to multivariable calculus. Topics include: Linear approximation and Taylor's theorems, Lagrange multiples and constrained optimization, multiple integration and vector analysis including the theorems of Green, Gauss, and Stokes.

Prerequisites for the course are MATH 1502 with *minimum grade* of D, or MATH 1512 with *minimum grade* of D, or MATH 15X2 and MATH 1522 with minimum grades of D.

Attendance: Attendance is required for all lectures. The student who misses a class meeting is responsible for any assignments and/or announcements made. Office hours will not be utilized to re-teach material presented in class. However, questions to better understand the course are always welcome.

There will be no opportunities for make-up tests after the fact. **In the event of an absence due to travel representing Georgia Tech, such as an intercollegiate sports competition, you must notify the professor at least two weeks in advance to arrange an early test or other alternative**. Otherwise, such absences will be treated as personal.

Homework: This course will have daily homework assignments which should be done before the next class. Homework will not be collected, but will help with the quizzes and exams.

Quizzes: There will be weekly quizzes through out the semester.

Exams: This course will have four mid-term exams, and a comprehensive final exam. The exams for the course will take place on:

Exam Dates:

Exam 1	September 21
Exam 2	October 12
Exam 3	November 2
Exam 4	November 23
Final Exam	Thursday, December 10 11:30am - 2:20pm

Calculators: No restrictions will be placed on the use of calculators that do elementary mathematics on the tests. **Calculators that can do calculus symbolically shall not be brought to tests**. No credit will be given on tests for a correct answer without the intermediate steps.

Learning Disabilities: It is the right of any student with a certified learning disability to request necessary accommodation. Such requests must be made well in advance of the time that the accommodation is required and a letter of documentation from the ADAPTS office must be presented at the time of any request.

Academic Honesty: It is expected that all students are aware of their individual responsibilities under the Georgia Tech Academic Honor Code, which will be strictly adhered to in this class.

Additional Resources: In addition to the textbook, lectures, and office hours there are other resources available that might be of use for you during the course. All Georgia Tech students are eligible for 1-on-1 tutoring, see the website associated with the Office of Success Programs. There is also the Math Lab in the School of Mathematics where tutoring services are provided.

The following additional links also provide useful information on how to study mathematics and a different presentation of some of the material that has been covered in this course.

How to Study Mathematics:
http://www.math.ohio-state.edu/students/how_to_study.html
MIT Online Mathematics Courses:

Grades: The usual ten-point scale will be used (A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: 0-59), however, if necessary, adjustments will be made to arrive at a standard grade distribution. Grades will be based upon quizzes, the mid-term exams, and the final exam and will be computed with the following formula:

$$(E1 + E2 + E3 + E4 + Q + F - \min(E1, E2, E3, E4, F)) + \frac{F}{2}$$

where the components of this formula correspond to the ingredients mentioned above. The dropped grade in the formula is the only mechanism for coping with personal events such as illness and family emergencies.

Topics Covered During the Semester:

Topic	Lectures
Vector Calculus, parametric curves and motion	7
Functions of several variables, visualization and partial differentiation	6
Functions of several variables, gradients, optimization, differentials	10
Double and triple integrals	10
Vector analysis	10

Important Dates for Fall 2009:

August 17	First day of classes
August 21	Last day to register
September 7	Labor Day - No Class
October 3-6	Fall Student Recess - No Class
October 16	Last day to drop or withdraw with a grade of "W"
October 25	Last day to withdraw from school with a grade of "W"
November 26-27	Thanksgiving Break - No Class
December 4	Last day of classes