# MATH 1501 SYLLABUS

## FALL 2001

Course Number:   MATH 1501, Sections G1–G3
Course Name:   Calculus I

Lecture Time:   MWF 1:05-1:55 p.m.
Lecture Room:   Weber SST Room 2

Professor:   Dr. Christopher Heil
Office: Skiles 260
Office Phone: (404) 894-9231
Email Address: heil@math.gatech.edu

Office Hours:   MWF 2:00–3:00 p.m., and by appointment

Contacting me:   Please don't be afraid to contact me outside of class. If you can't come during office hours, stop by after class to make an appointment. I encourage you to send questions by email. I check email often, including evenings and weekends. Try it!

Recitation Time:   TuTh 1:05 p.m.

TA and Room:   G1: Ms. Shah, Skiles 140
G2: Ms. Deen, Skiles 170
G3: Mr. Khan, Skiles 202

Tutoring Lab:   The mathematics department operates a tutoring lab during the semester in Skiles 257. The lab is usually open many hours a day and is staffed by teaching assistants. Watch for announcements on the walls of the halls of the math department.

Textbook:   *Calculus*, by Salas, Hille, and Etgen

Material:   Review of functions, graphs, inequalities (Sections 1.1–1.8)
Limits and continuity (Sections 2.1–2.6)
Limits of sequences and the exponential function (Sections 10.1–10.3)
Differentiation: Computing derivatives (Sections 3.1–3.9)
Minimum-maximum problems and curve sketching (Sections 4.3–4.8)
Integration and the fundamental theorem of calculus (Sections 5.1-5.8)
Applications of integration (Sections 6.1-6.6)
Transcendental functions (Sections 7.1-7.3, 7.5, 7.6)
Techniques of integration (Sections 8.1-8.4)
Complex numbers (handout)

**Grading.** Your grade will be determined by your performance on quizzes, in-class exams, and the final exam:

| | |
|---|---|
| 11 Quizzes | 10 points each, lowest dropped |
| Hour Exam I | 50 points |
| Hour Exam II | 50 points |
| Hour Exam III | 50 points |
| <u>Final Exam</u> | <u>75 points</u> |
| TOTAL | 325 points |

Letter grades will be based on your accumulated points at the end of the semester, according to 90%, 80%, 70%, 60% cutoffs (although I may adjust the cutoffs downward at the end of the semester, depending on class distribution):

| | |
|---|---|
| 292–325 | A |
| 260–291 | B |
| 227–259 | C |
| 195–226 | D |
| 0–194 | F |

At the END of the course, I'll evaluate the class distribution and decide if a curve is needed. I'll only curve *down* from the above cutoffs, not up.

**Midterm Grades.** You will receive a midterm grade of S (satisfactory) or U (unsatisfactory). This just gives you some idea of where you stand in the course. The midterm grade is just for your benefit, it has no impact on your final grade.

**Attendance.** Attendance at lectures and recitations is required. Recitations are your chance to get help on homework and to prepare for the exams. Please come prepared to recitations; work out problems ahead of time and bring your questions.

**Homework.** Homework will be assigned but not collected. It is important that you work problems, this is the best way to prepare for the quizzes and the exams. Moreover, you shouldn't just work problems with your book and notes in front of you: work some that way one day, and then come back a couple of days later and see if you can work other problems from that section WITHOUT looking at your book or notes. This is how you'll know whether you really understand the material or not.

**Quizzes.** There will be a 15-20 minute quiz in every Thursday recitation, except for weeks in which an hour exam is scheduled. The lowest quiz score will be dropped. Quizzes will include homework-like problems as well as questions about definitions, statements of theorems, and other problems to test your understanding. NO CALCULATORS ARE ALLOWED ON QUIZZES OR EXAMS.

**Exams.** The exams test UNDERSTANDING as well as problem solution skills. The final is comprehensive. The tentative dates for the exams are:

| | |
|---|---|
| Hour Exam I | Thursday, September 13 |
| Hour Exam II | Thursday, October 11 |
| Hour Exam III | Thursday, November 8 |
| Final Exam | Tuesday, December 11, 11:30 a.m.–2:20 p.m. |

Makeup quizzes and exams are only given in extreme circumstances. If you have a problem or conflict, CONTACT me by phone or email!

# MATH 1501 - SB1/2
## *Calculus 1 for Biologists*
## Fall 2011

**Instructor:** **Dr. Lauren Childs** Webpage  Email

**Lectures and Recitations:**

| Section | Name | Location | Time | Office Hours |
|---|---|---|---|---|
| Instructor, 1501-SB1/SB2 | Dr. Lauren Childs | Howey L3 (Physics) | Tues/Thurs 12:05 - 1:25 pm | Cherry Emerson 237, Mon 12 - 1 pm, Tues 2 - 3 pm |
| TA, 1501-SB1 | Nick Cheng | Skiles 254 | Mon/Fri 1:05 - 1:55 pm | Skiles 230, Wed 1 - 2 pm |
| TA, 1501-SB2 | Moreed Khosravanipour | Skiles 268 | Mon/Fri 1:05 - 1:55 pm | Skiles 230, Thurs 3 - 4 pm |

**Text:** Modeling the Dynamics of Life, 2nd edition. We will cover most of chapters 1 - 4 including discrete-time dynamical systems, derivatives and their applications, differential equations, integrals and their applications.

**Course Schedule**

**Grading:** Grades will consist of 35% from quizzes, 30% from midterms and 35% from the final exam. Grades will be assigned according to the following scale: 90 - 100 A, 80 - 89 B, 70 - 79 C, 60 - 69 D, below 60 F.

**Examinations:** There will be 9 quizzes, 3 midterms and a final exam. All quizzes and exams are closed book. Calculators and notes are not allowed.

**Make-up exam policy:** No make-up quizzes or exams are given. Missing a quiz or exam results in a "0" score. However, 2 quizzes with the lowest scores and the midterm with the lowest score will be dropped from the final grade.

**Homework:** No homework will be collected. It is recommended you solve all assigned problems. All quiz problems will come from assigned problems. **Assignments**

**Academic Integrity:** Each student in this course is expected to abide by the Georgia Tech Honor Code. Any evidence of Honor code violations will be reported.

**Extra Help:** The Math Lab

# Harrell's 1501 syllabus

**Mathematics 1501      Calculus I      Course Description**

Fall, 2001 (MWF 12:00) in Physics Lecture Room 1, in the Howey Building
Recitations will take place in various rooms in the Skiles Building on Tuesday and Thursday, as detailed on OSCARWeb.

**Instructor**: Evans Harrell, Office Skiles 134, 894 4312, harrell@math.gatech.edu
**Instructor's office periods**: MWF 1:15-2:30, Skiles 134
**Assistants**:

- Brian Cupp, Lamvien Ngo, Kevin Khan, Viswanee Heeramun, Roy Dalati

**Class web page**: http://www.math.gatech.edu/~harrell/1501/ It is your responsibility to consult the web page regularly for information about the class. The web page will contain the definitive information about the class, such as homework assignments. The web page will also give you e-mail contact with the instructor and the teaching assistant, and we shall do our best to respond to your questions. Electronic mail has swollen to flood proportions, so please do not be upset if the response is delayed or brief. Information of use to the whole class may be posted on our faq list. The faq may be the quickest way to answer routine questions.

**Required texts**:
Salas, Hille, and Etgen, *Calculus*

**Required software**:

- Web browser
- Adobe Acrobat reader
- Maple (or Mathematica)

The use of mathematical software will be a required element of the class, but advanced use of Maple will not be expected. Early in the term there will be a recitation devoted to Maple for those for whom it is new. Mathematica may be used as an alternative, but we are not able to provide help and support for Mathematica.

**Description**: Calculus is not only essential in science and 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. Learning calculus is arguably your most important educational experience at Tech. It is challenging, and it can be rewarding and enjoyable. (Click here for more propaganda.)

In this first term there are several themes:

- visualizing relationships (graphing)
- rates of change (derivatives)
- the best and the worst
- areas and accumulation (integrals)

**Grading and requirements**: There will be in-term tests on

- Friday, 7 September;
- Friday, 28 September;
- Friday, 19 October; and
- Friday, 16 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 quizzes, given most Thursdays. Your quiz average will be based on the best ten quizzes. In addition, Prof. Harrell may announce occasional opportunities for extra credit. (EC will be rare and small in magnitude.)

Students' grades will depend on the following quantity:

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

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

where the components of this formula correspond to the ingredients mentioned above, after scaling so that all of them except EC = extra credit total have a common median. There will be **no opportunities for make-up tests after the fact**. As you can work out, the grade system includes a drop. **The drop is not a right, but simply a convenient way to cope with absence or poor performance due to illness or other personal situations**. In a large class like this, such events are common. You will not need, or benefit from, formal excuses. **Abuse this privilege at your peril!**

We do not have a fixed idea of how many students will get A's, B's, etc., but will decide the grade divisions after review of individual tests, including the final exam. Normally, the median grade in Georgia Tech calculus classes is a C+.

**Calculators and tests**. No restrictions will be placed on the use of calculators that do *elementary* mathematics on the tests. **Calculators that can do calculus symbolically on the date of a test will be confiscated and donated to the School of Mathematics**. 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 1501 assignments page. The subject matter covered will be as follow:

1. Review of functions, graphs, and mathematical thinking
2. limits and continuity
3. Differentiation: Computing derivatives
4. Sequences
5. The exponential function
6. Maximum and minimum
7. Definite integration and areas
8. Indefinite integration and the fundamental theorem of calculus
9. Applications of integration
10. Transcendental functions
11. Techniques of integration
12. Complex numbers

**On-line materials**

This course will benefit from many on-line materials, which you can access with 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/1501/, and there are many other useful things at the School of Mathematics page for on-line resources: http://www.math.gatech.edu/~bourbaki/, as well as at the vector calculus page at mathphysics.com

Scientists and Engineers today do mathematics differently than in the past. Complicated calculations can be done with software such as Maple, and there are many powerful items on the World Wide Web to help you both to learn mathematics and to do it effectively. Georgia Tech is one of the leaders in incorporating these developments into our calculus classes, with Maple, Mathematica, Java, and other software. We hope that you will use software and the Internet to help with calculations and learning, but will always remember that real understanding requires you to exercise your mind as well as your fingers.

# MATH 1501N - Calculus I

**Instructor:** Plamen Iliev
**Lectures:** MWF 9:05-9:55am, Room L3, Building: Howey (Physics)
**Office hours:** MWF 11:00-12:00, Skiles 227
**Textbook:** *Calculus, One and Several Variables*, by Salas, Hille, and Etgen (tenth edition); John Wiley and Sons, Inc.


Syllabus
Course Calendar

Online Course/Instructor Opinion Survey


**Teaching assistants & Recitations:**

| Section | TA | Recitations: TuTh 9:05-9:55 | Office hours |
|---|---|---|---|
| N1 | Jake Boggan<br>E-mail: jboggan@math.gatech.edu | Skiles 254 | TuTh 12-1<br>Skiles 225A |
| N2 | Kimberly Rhodes<br>E-mail: krhodes@math.gatech.edu | Skiles 243 | Th 10-11<br>Skiles 153 |
| N3 | Meredith Perrie<br>E-mail: mperrie@math.gatech.edu | Skiles 170 | M 10-11<br>Th 10:15-11:15<br>Skiles 146A |
| N4 | Yunita Fu<br>E-mail: gtg195w@mail.gatech.edu | Instr. Center 119 | Tu 10-11<br>Skiles 230 |
| N5 | Jacqueline Rand<br>E-mail: jmrand89@math.gatech.edu | Bunger-Henry 413 | Tu 12-1<br>Skiles 230 |


**Grading policy:** There will be three 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 | 15% |
|---|---|
| Lowest test | 10% |
| Two best tests | 20% + 20% |
| Final exam | 35% |


**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.

**Tests:** Tentative dates for the tests and the final exam are:

- Test 1, Tuesday, September 9, Solutions of Test #1
- Test 2, Tuesday, October 7, Solutions of Test #2, Solutions for Section N2
- Test 3, Tuesday, November 11, Solutions of Test #3, Grading of Test #3
- Final exam: Wednesday, December 10, 2008, 2:50 - 5:40pm in Room L3, Building: Howey Physics. You must bring the BuZZCard or a picture ID. The following trigonometric formulas will be given to you during the final exam.

**Please let me know of any conflicts with the test dates immediately.** For sample old tests see the links below:

- Old tests for Calculus I
- Other old tests

**Policy on tests.** Notes, books, calculators, laptops, cell phones, ipods etc. cannot be used during tests.

**The honor code.** It is the responsibility of each of us to be aware of the provisions of the Institute's honor code and to adhere scrupulously to a policy of academic honesty. The Honor Code protects the integrity of the Institute's degrees, and any violation of the code is a very serious matter. The honor code can be found at www.deanofstudents.gatech.edu/integrity/policies.php

**Useful links:**

- Official school calendar
- Math Lab

# COURSE SYLLABUS

# MATH 1501, CALCULUS I

# FALL 2011

**Instructor**: Klara Grodzinsky
**Office**: Skiles 232, 404-894-4397 (or leave a message at 404-894-2700)
**Office Hours**: Tuesdays, 12:30-1:45 pm; Wednesdays, 10:00-11:00 am; and by appointment
**E-mail**: klarag@math.gatech.edu
**Web Page**: http://www.math.gatech.edu/~klarag

**Course Title**: Calculus I
**Text**: Salas, Hille, and Etgen, *Calculus*, 10th ed.  We will cover most of chapters 1-8 and 11.
**Meeting Times: Lecture,** Tuesdays and Thursdays 9:35-10:55 AM, Physics L4; **Recitation**, Mondays and Wednesdays 9:05-9:55 AM, various locations
**Course Websites:** T-square, https://t-square.gatech.edu; WileyPlus, http://www.wileyplus.com

**WileyPlus Course Information:** You will need to purchase a WileyPlus code in order to complete the on-line homework assignments. WileyPlus comes with an entire *printable* electronic version of the textbook; thus, it is not necessary to purchase a text unless you prefer to do so. (NOTE: if you will want a hard copy of the text, you can purchase the book packaged with WileyPlus at a greatly reduced rate from buying the program and book separately—please check at the bookstore.) *When signing up for WileyPlus, it will be immensely helpful to me (for grading purposes) if you will set your STUDENT ID to your USERID for the GT system (i.e., your T-square USERID).* We will be using two textbooks on WileyPlus.

> **WileyPlus for Salas/Hille/Etgen (access code required):**
> http://edugen.wileyplus.com/edugen/domain/dmn43040/

> **WileyPlus for Anton (no access code required):**
> http://edugen.wileyplus.com/edugen/domain/dmn58323/

## GRADING SYSTEM

**HOMEWORK**: Homework will be assigned on-line and will consist of exercise problems on WileyPlus. You are expected to understand **all** homework problems for the tests. In order to increase the effectiveness of recitation, you should attempt the problems **before** the weekly recitation sections. Exercises on WileyPlus will be due every Monday and Thursday at midnight (except during class recesses). At least one homework grade will be dropped. **No late homework will be accepted**.

**PARTICIPATION**: Class participation will be based on your attendance in the lectures and participation in the recitations. We will use TurningPoint clickers to measure lecture attendance, beginning on the second week of classes. Clickers may be purchased from the bookstore, or you may subscribe to the i-Phone application instead by visiting: http://www.turningtechnologies.com/audienceresponseproducts/responseoptions/responseware/.
In addition, your participation in the recitation sections will be measured by your effort in completing practice problems during most of the recitation classes. The recitation grade will count as extra credit and will be added onto the final average, affecting all borderline grades.

**TESTS:**  Six 50-minute tests will be administered during the term. Tests dates are on the following Wednesdays: **September 7, September 21, October 5, October 26, November 9, and November 30.** No books, notes, calculators, cell phones, or other electronic devices are allowed during the tests. If a student has a disability that may require accommodation on tests, please make an appointment with the

student has a disability that may require accommodation on tests, please make an appointment with the ADAPTS office to discuss any special needs, as well as meeting individually with me.

**FINAL EXAM**: The final exam will cover all course materials and will be administered on **Tuesday, December 13,** from 8:00-10:50 am. All students must take the final examination.

## GRADING SCALE

*Your final average will be computed as follows:*

| *Assignment* | *Option 1* | *Option 2* |
|---|:---:|:---:|
| Lecture Attendance | 5% | 5% |
| Homework | 10% | 10% |
| Tests (10% each) | 60% | 50% (drop lowest) |
| Final Exam | 25% | 35% |
| Total: | 100% | 100% |
| Recitation: | up to 2% extra | up to 2% extra |

In all cases, you will receive the higher of the two average options.

***Do not expect any deviation from the following scale:***

> **A**: [90%, 100+%];  **B**: [80%, 90%); **C**: [70%, 80%);  **D**: [60%, 70%);  **F**: [0%, 60%).

**Midterm grades** will be assigned on **September 30**.  A satisfactory grade will be assigned to all students with a midterm average of 70% or higher (based on the above weighting of grades).

## CLASS POLICIES

**ATTENDANCE**: You are expected to come **prepared** and actively participate in every lecture and recitation session.  In the event of an absence, you are responsible for all missed materials, assignments, and any additional announcements or schedule changes given in class.  Class disruptions of ANY kind will NOT be tolerated and may result in your removal from the classroom and a LOWER final grade.  Please show courtesy to your fellow classmates and instructor by adhering to the following class rules: turning off all laptops, cellular phones, i-pods and pagers (and other electronic devices, unless being used for note-taking) during class, coming to class on time and staying for the entire class period, refraining from conversing with your fellow students, and putting away any reading materials unrelated to the course.

**ACADEMIC DISHONESTY**: All students are expected to comply with the Georgia Tech Honor Code (the honor code can be found at http://www.osi.gatech.edu/plugins/content/index.php?id=46). Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Dean of Students. Cheating includes, but is not limited to: using a calculator, books, or any form of notes on tests; copying directly from **any** source, including friends, classmates, tutors, or a solutions manual; allowing another person to copy your work; signing another person's name or having another person sign your name on an assignment; taking a test in someone else's name, or having someone else take a test in your name; or asking for a regrade of a paper that has been altered from its original form.

**CALCULATORS**:  While you may need a calculator for help with some of the homework problems, calculators of any kind are **NOT ALLOWED** on any in-class tests.

**REGRADING OF PAPERS:**  If a problem on your test has been graded in error, you must submit a regrade request to me (not your TA!) **in writing**, along with your paper, no more than one *week* after the

**REGRADING OF PAPERS:**  If a problem on your test has been graded in error, you must submit a regrade request to me (not your TA!) **in writing,** along with your paper, no more than *one week* after the tests have been returned in class.  Should you wish to have your paper regraded, *do not change or add to the work on your paper*!  If you must write on your returned paper, be sure to write in a different color ink and clearly indicate what you have added.  A regrade request can only be submitted if you have done something CORRECT on your test that has been marked as incorrect. You MUST check your answers with the solutions BEFORE submitting such a request.

**MAKE-UPS:**  In an emergency situation, I may allow a make-up test or quiz if I am notified **prior** to the exam and provided with a reasonable, **written confirmation** of your absence. Any make-ups must be completed before the corresponding test has been graded and returned to other students. If you will miss a test or quiz due to a university-sponsored event or athletics, please provide me with the official documentation in advance.

**ADDITIONAL HELP:**  Asking questions is a key to success! Please feel free to stop by my office hours or your TA's office hours whenever you have questions. In addition, free tutoring is available on a first-come/ first-serve basis Monday-Thursday in the Math Lab, located in the tutoring center on the second floor of Clough Commons.

Calculus I, Math 1501
Course Syllabus
Fall Semester 1999

Instructor: Andrzej Swiech
Lectures: MWF 9, Howey-Physics L2
Office: Skiles 266
Office Hours: MW 1-2 pm, F 10-11
Phone: (404) 894-2705
E-mail: swiech@math.gatech.edu

Course web page: http://www.math.gatech.edu/∼swiech/1501fall99.html

Recitations:
1501 N1, TR 9, Skiles 240, Faisal Alturki, faisal@ee.gatech.edu
1501 N2, TR 9, Skiles 268, Farqed Al-Nuaimy, gt6311b@prism.gatech.edu
1501 N3, TR 9, Skiles 149, Trevor Wine, tmw550@mindspring.com
1501 N4, TR 9, Skiles 254, Dyana Harrelson, drice@math.gaatech.edu
1501 N5, TR 9, Skiles 270, Amador Lopez, gt7271b@prism.gatech.edu

Math Lab: SKILES 257

Textbook: Salas, Hille and Etgen, **Calculus, one and several variables**, 8th edition, John Wiley and Sons, Inc., 1999.

Course Description: The course covers differential calculus and basic integral calculus including the fundamental theorem of calculus, Taylor's Theorem with remainder, infinite series, and convergence tests. The topics are:

1. Review of functions, graphs, inequalities and other basic notions, Sections 1.1-1.8, 2 lectures.
2. Limits and continuity, Sections 2.1-2.6, 5 lectures.
3. Limits of sequences and the exponential functions, Sections 10.1-10.3, 3 lectures.
4. Differentiation: Computing derivatives, Sections 3.1-3.9, 9 lectures.
5. Minimum-maximum problems and curve sketching, Sections 4.3-4.8, 3 lectures.
6. Integration and the fundamental theorem of calculus, Sections 5.1-5.8, 6 lectures.
7. Applications of integration, Sections 6.1-6.6, 6 lectures.
8. Transcendental functions, Sections 7.1-7.3, 7.5, 7.6, 3 lectures.
9. Techniques of integration, Sections 8.1-8.4, 3 lectures.
10. Complex numbers, 3 lectures.

Grading: There will be two tests (September 23 and November 2), homework assignments, one computer assignment and the final exam. Your final score will be scaled to 100% and calculated according to the following rule: Homework will count for 10% of the final score, computer assignment for 10%, each test for 20%, and the

final exam for 40%. You will get an A, respectively B, C, and D if your final score is greater than 88%, respectively 75%, 63%, and 50%. These requirements may be lowered if the overall score of the class is low (i.e. your grade may get curved up). Improvement will be taken into account in assigning final grades.

Computer project: You will be required to do a computer project using MAPLE (or another computer algebra system if you prefer to do so). The project will be done in groups of three people. Further details about the project will be given later. It will be due on November 25. Computer resources for Calculus I can be found at http://www.math.gatech.edu/~bourbaki. Please visit this web page. The Mac Computing Lab is located in Skiles 156 and is open to all students. The available software includes Mathematica 2.2, Maple V Release 4, and Matlab 4.2c.1.

Homework: As the course progresses I will be assigning homework problems (at the end of every lecture). As a rule the problems assigned in a given week will be due on Thursday in recitations the following week. Homework assignments, together with the dates when they are due, will also be available in the news and announcements section of the course web page. Late homework will not be accepted. Among the assigned problems you will find computer exercises. Please do not turn them in as there will be a separate computer assignment.

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

Please visit the course web page at http://www.math.gatech.edu/~swiech/1501fall99.html. You will find there links to materials from past courses, news about the course, etc.