# Syllabus for MAT 123 Fall 2016

## MAT 123: Introduction to Calculus

# About the Course

**About this course:** The goal of this course is to ensure that you have a proper background to take calculus at Stony Brook. This means that we will need to accomplish several things:

- Ensure that you have fluency with a variety of topics, such as trigonometry, exponentials and logarithms, algebraic functions (polynomials and rational functions).
- Ensure that you are comfortable and conversant with the underlying concepts such as functions, domain, range, inverse functions, functional composition, and so on.
- Ensure that you have mastered the various means of manipulating functional and algebraic expressions, solving basic equations, and their graphical representations.
- Be able to apply the above to problems both within and outside of mathematics. Part of this is a deeper understanding of functions, whether viewed as graphs, tables, or formulae. Fluency in understanding the language of mathematics is essential for success in the sciences or engineering.

The text is *Precalculus: a Prelude to Calculus (2nd edition)*, by Sheldon Axler.
Use of WebAssign is required but you are NOT required to purchase the text book. There are many options regarding the text other than from the bookstore; please see the page about the text on the class web page for details.

You may use calculators to help you with learning the material or for homework and WebAssign problems. You may **NOT** use calculator on exams.

**Course Prerequisites:** In order to take MAT123, you must have either

- Passed MAP103 with a grade of C or better, or
- Received a score of level 3 or better on the math placement exam.

# Homework

Each week you will have paper homework problems that you can hand in at recitation or put in your TA's mailbox. ***Homework is due at the beginning of your recitation, and no later than Noon of that week if you miss recitation.*** You will also be required to use WebAssign for further homework problems. ***In general, WebAssign assignments will be due on Wednesdays at Noon. You should check WebAssign frequently for due dates.***

If you are having difficulty understanding a topic, we suggest that you meet go to your recitation section, meet with your TA, go to the Math Learning Center (located in the basement of the Mathematics Tower), or go to your professor's office hours.

## Recitations

Recitation is very valuable. There, your TA will go over the homework problems and will be available to answer your questions.

## Exams

There are two midterms and a final. The schedule is:

| | | |
|---|---|---|
| Midterm 1 | Thursday, September 29 | 8:45 – 10:15 PM |
| Midterm 2 | Thursday, November 3, | 8:45 – 10:15 PM |
| Final | Wednesday, December 14 | 2:15 – 5:00 PM |

Rooms the exams will be announced in BlackBoard in advance of each exam.

**We do not give make up exams but instead replace an exam missed for a valid reason by a grade computed on the balance of the work in the course.**
**Note that the Midterms are at night, not in the morning!**

### Important Dates:

There are no classes September 5-6.
There are no classes November 23-27
Classes end on December 10.

You may drop without tuition liability until August 28.
You may withdraw without a "W" , or add/swap classes) until September 13 at 4:00 pm.
You may move up or down in MAT/MAP courses until October 7 at 4:00 pm.
You may withdraw with a "W" until October 29 at 4:00 pm.
You may change the course to Grade/Pass/No Credit until October 29 at 4:00 pm.

## How your grade will be calculated

Homework, WebAssign, Recitation - 15%
Midterm 1 – 25%
Midterm 2 – 25%
Final – 35%

We reserve up to 5% for participation.

## Blackboard

Please check Blackboard frequently. Assignments, announcements, grades, etc. will be posted on Blackboard. When items are posted, you will receive an email informing you of the fact. At that point, you will be presumed to know what has been posted. We suggest that you check Blackboard before you email your TA or professor.

# Professors and Teaching Assistants

**The Course Coordinator is David Kahn**

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|---|---|---|---|---|---|
| LEC 01 | MW | 5:30 pm-6:50 pm | Harriman | 137 | Miriam Flynn |
| R01 | Tu | 11:30am-12:23pm | Library | N4072 | Stephanie Salvator |
| R02 | M | 12:00pm-12:53pm | Harriman | 116 | Thomas Rico |
| R03 | W | 4:00pm-4:53pm | Library | W4535 | Prithviraj Chowdhury |
| R04 | M | 7:00pm-7:53pm | Library | W4540 | Jaclyn Leary |
| R05 | Tu | 2:30pm-3:23pm | Earth&Space | 069 | James Alford |
| R06 | Tu | 5:30pm- 6:23pm | Physics | P127 | Michael Albanese |
| LEC 02 | TuTh | 10:00am-11:20am | Harriman | 137 | Ruobing Zhang |
| R20 | M | 12:00pm-2:53pm | Library | N4072 | James Alford |
| R21 | F | 1:00pm-1:53pm | Lgt Engr Lab | 152 | Amit Quackenbush |
| R22 | Tu | 8:30am-9:23am | Library | W4535 | Amit Quackenbush |
| R23 | M | 1:00pm-1:53pm | Library | W4530 | Thomas Rico |
| R24 | W | 4:00pm-4:53pm | Earth&Space | 181 | TanyaLisa Agha |
| R25 | W | 5:30pm- 6:23pm | Physics | P116 | TanyaLisa Agha |
| LEC 03 | MW | 10:00am-10:53pm | Earth&Space | 001 | David Kahn |
| R30 | Th | 8:30am-9:23am | Mathematics | P131 | Jessie Cai |
| R31 | Th | 5:30pm- 6:23pm | Physics | P116 | Jessie Cai |
| R32 | M | 4:00pm-4:53pm | Earth&Space | 069 | Kristen Pagano |
| R33 | M | 11:00am-11:53am | Library | E4320 | Deb Wertz |
| R34 | M | 5:30pm- 6:23pm | Physics | P127 | Kristen Pagano |
| R35 | Tu | 7:00pm-7:53pm | Physics | P130 | Jaclyn Leary |
| LEC 30 | | | | | Online |
| R40 | Tu | 8:30am-9:50am | Library | E4315 | Deb Wertz |
| R41 | Th | 7:00pm-8:20pm | Physics | P112 | Holly Chen |

# Course Schedule

| Date | Topic | Relevant Chapter(s) in Axler | Homework |
|---|---|---|---|
| Week of 29-Aug | Administrative material and course expectations | | |
| | Functions and Graphs | 1.1, 1.2 | |
| | Composition of functions | 1.4 | Diagnostic WebAssign |
| Week of 7-Sept | Transformations | 1.3 | |
| | Inverse Functions | 1.5, 1.6 | Homework 1 is due |
| Week of 12-Sept | Introduction to Trigonometry | 4.3, 4.5 | |
| | Right triangle trigonometry | 4.3, 4.5 | |
| | Right triangle trigonometry | 4.3, 4.5 | Homework 2 is due |
| Week of 19-Sept | Unit Circle | 4.1, 4.2 | |
| | Unit Circle | 4.1, 4.2 | |
| | The reciprocal trig functions | 4.4, 4.5 | Homework 3 is due |
| Week of 26-Sept | Review for Midterm 1 | | |
| | Review for Midterm 1 | | |
| | Go over Midterm 1 | | |
| Week of 3-Oct | Linear equations and graphs | 2.1 | |
| | Quadratic equations and graphs | 2.2 | |
| | Polynomials | 2.4 | Homework 4 is due |
| Week of 10-Oct | Laws of Exponents | 2.3 | |
| | Rational Functions | 2.5 | |
| | Exponential Functions | Chapter 3 | Homework 5 is due |
| Week of 17-Oct | Exponential Functions | Chapter 3 | |
| | Logarithms | Chapter 3 | |
| | Logarithms | Chapter 3 | Homework 6 is due |
| Week of 24-Oct | Word problems | Chapter 3 | |
| | Inverse Trig Functions | 4.6 | |
| | Inverse Trig Functions | 5.1 | Homework 7 is due |
| Week of 31-Oct | Review for Midterm 2 | 5.1 | |
| | Review for Midterm 2 | | |
| | Go over Midterm 2 | | |
| Week of 7-Nov | Go over Midterm 2 | | |

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|---|---|---|---|
| | Graphs of Sine and Cosine | 6.1 | |
| | Trig Identities | 5.2 | Homework 8 is due |
| Week of 14-Nov | Angle Sum/Difference Formulas | 5.5, 5.6 | |
| | Double and Half Angle Formulas | 5.5, 5.6 | |
| | Law of Sines | 5.4 | Homework 9 is due |
| Week of 21-Nov | Law of Cosines | 5.4 | |
| Week of 28-Nov | Solving Equations | | |
| | Solving Equations | | |
| | Solving Equations | | Homework 10 is due |
| Week of 5-Dec | Cumulative Review | | |
| | Cumulative Review | | |
| | Cumulative Review | | |

# Americans with Disabilities Act:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and DSS. For procedures and information, go to: http://www.ehs.sunysb.edu and look at Fire Safety and Evacuatino and Disabilities

# Academic Integrity:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

# Critical Incident Management:

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

# Conduct

Stony Brook University expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. Faculty are ***required*** to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.