

# MAT 312/AMS 351 APPLIED ALGEBRA LEC01/ R01&R02

**What below is all subject to change.  
Significant changes are announced in class.  
This document may be updated from time to time.**

## IMPORTANT

The following is strictly enforced: no texting/surfing during class; phones off and stored away. No food.

## TEXTBOOK

Numbers, Groups and Codes, by J.F. Humphreys and M.Y. Prest (2nd ed.)

## MEETING TIMES

LEC 01: TuTh 10:00-11:20am, Harriman Hll 112.

R01 : M 11:00-11:53am, Earth&Space 181, Santai Qu

R02 : M 11:00-11:53am, Frey Hall 226, Fangyu Zou.

## TENTATIVE SCHEDULE OF CLASSES

Jan 23&25 1.1 (cover 1.1, assign H1)

Jan 30&1 1.2 1.3 (cover 1.2, 1.3, assign H2)

Feb 6&8 1.3 1.4 (cover 1.3, 1.4, assign H3; collect H1).

Feb 13&15 1.5 (cover 1.5 assign H4; collect H2).

Feb 20&22 1.6 (cover 1.6 assign H5; collect H3).

Feb 27&1 2.1 2.2 (cover 2.1, 2.2, assign H6; collect H4).

Mar 6&8 2.3 (cover 2.3, assign H7; collect H5).

### Mar 13&15 SPRING BREAK

Mar 20&22 4.1 (cover 4.1, assign H8; collect H6) **THERE IS NO HMK 8**

Mar 27&29 4.1, (cover 4.1, assign H9; collect H7)

### Tu MARCH 27 MIDTERM, Covers Ch 1

Apr 3&5 4.2, 4.3 (cover 4.2 4.3, assign H10)

Apr 10&12 4.3, 5.1 (cover 5.1, assign H11; collect H19)

Apr 17&19 5.2 (cover 5.2, assign H12; collect H10)

Apr 24&26 5.3 (cover 5.3, assign H13; collect H11)

May 1&3 catch-up (collect H12 and H13)

## EXAMS

Midterm: Th Mar 8, in class. (due to the weather, it took place on Tu March 27).

Average 250/350.

Final: FR MAY 11: 11:15am-1:45pm room to be announced.

There are no make-ups for missed exams.

If either exam is missed without a reasonable justification, the score will be zero.

If the midterm exam is missed because of a serious (properly documented) illness or emergency, the semester grade will be determined based on the balance of the work in the course. If the final is missed because of a serious

(documented) illness or emergency, then the student will receive an I (incomplete).

### **TA REVIEW SESSION**

Announced by your TA.

### **OFFICE HOURS**

Instructor: de Cataldo LEC 01 OFFICE HRS: TuTh 11:30-1pm, MAT TOWER 5-108  
mark.decataldo@stonybrook.edu

TAs: Santai Qu: MAT TOWER 3-103 Wed 10-11am; Math Learning Center Tu&Th  
10-11am., santai.qu@stonybrook.edu

Fangyu Zou: MAT TOWER 2-109 Wed 9:30-10:30am; Math Learning Center  
Mo&Wed 1-2pm, fangyu.zou@stonybrook.edu

### **EMAIL**

Best way to contact your instructor/TA: in class and during office hours.

Use email only for true emergencies; example: you are sick, you inform the instructor you are not coming to the test,

and you will bring an official letter from the doctor (including phone number and address of medical practice to reach said doctor).

Please refrain from using email to ask: for exceptions to the various rules (e.g. late hmk), math questions (our typing abilities are limited), questions about grades.

### **HOMEWORK**

Assigned via BLACKBOARD email on or before Th; due at recitation on Mo (11 days later); returned during the following recitation.

Late homework will not be accepted under any circumstances. No exceptions.

Homework must be stapled with a metallic staple (no folding, no paper clips).

Unstapled homework will not be accepted. No exceptions.

I have instructed the TA to not accept unstapled homework. No exceptions.

We can usually tell if the homework has been copied; in that case, students may be reported for violating academic integrity.

### **RECITATIONS**

Their focus is on homework due that week and on the homework handed-in the week before.

Monday Jan 22: meets before 1st class; discussion of homework schedule, what to expect from recitations, overview of 1.1.

Monday Jan 29 focus on H1 (due the following week)

Monday Feb 5 focus on H2 (due the following week) and discussion of just-handed-in H1.

Etc.

### **GRADES**

HOMEWORK 20% 200pts; MIDTERM 35% 350pts; FINAL 45% 450pts. Total: 1000pts.

HOMEWORK score: add 10 best hmk scores; each hmk set=max 20 pts.

Grades will be posted on Blackboard. Students are responsible for monitoring them regularly (if there is a discrepancy, contact your TA)

Final grade: after the final, we will look at scores and then we will curve to produce final letter grades.

A tentative letter grade is given for the midterm (that is only an indication of how you did in the midterm).

My policy for final grades: <http://www.math.stonybrook.edu/~mde/grades.html>

## **EXAMS (MIDTERM AND FINAL)**

Use the problems, examples etc. in the book as a guideline.

There will be no sample tests.

Midterm: 6 problems; 5 of them similar (not necessarily identical) to homework; 1 a bit different, to test deeper understanding.

Final: 10 problems; 8 of them similar (not necessarily identical) to homework; 2 a bit different, to test deeper understanding.

## **SYLLABUS**

### **1.1 division algorithm, greatest common divisors**

1.2 induction

1.3 primes, unique factorization theorem

1.4 congruence classes

1.5 solving linear congruences

1.6 Euler's and public key codes

### **2.1 set theory**

2.2 functions

2.3 relations

### **4.1 permutations**

4.2 order and sign of a permutation

4.3 definition and examples of groups

### **5.1 preliminaries**

5.2 cosets and Lagrange's

5.3 groups of small order

### **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, Room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: <http://www.stonybrook.edu/commcms/studentaffairs/dss/>

**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 is 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/commcms/academic\\_integrity/index.html](http://www.stonybrook.edu/commcms/academic_integrity/index.html).

**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 University Community Standards 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.