



# MAT 312: Applied Algebra Summer II 2017

[Home](#)  
[General Information](#)  
[Syllabus](#)  
[Exams](#)

## Applied Algebra (MAT 312/AMS 351 Summer II 2017)

### 1 Course Description

This is a course on Elementary number theory and Group theory. We will focus mainly on computational and applied aspects.

### 2 Textbook

Numbers, Groups and Codes By J. F. Humphreys and M. Y. Prest

### 3 Homework

There will be one or two homework assignments each week. All homework assignments will be posted on blackboard.

### 4 Exams

The midterm will take place in class on Thursday 7/27/2017 .The final

exam will take place in class on Thursday 8/17/2017

## 5 Grading

Homework = 20%

Quiz = 10%

Midterm= 30%

Final= 40%

1

## 6 Syllabus

### 6.1 Elementary Number Theory

Division Algorithm , Induction , Unique Factorisation , Modular Arithmetic, Chinese Remainder Theorem , Euler's Theorem and Public Key Codes [1.1,1.2,1.3,1.4,1.5,1.6]

### 6.2 Introduction to Groups

Recap of Sets, Functions and Relations, Permutations , Definition of Group , Examples of Groups [2.1,2.2,2.3 ,4.1,4.2,4.3]

### 6.3 More Group Theory

Cosets, Lagrange's Theorem ,Direct Product,Error Detecting and Error Correcting Codes [5.1,5.2,5.3,5.4]

## 7 Disability Support Services (DSS) Statement

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.

[In addition, this statement on emergency evacuation is often included, but not required: 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/ehs/fire/disabilities> ]

## 8 Academic Integrity Statement

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

2

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)

## 9 Critical Incident Management Statement

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.

