

Policy Sheet

Course Math 5126, Abstract Algebra CRN 16094
Prereq Math 5125 (Abstract Algebra)
Instructor Peter A. Linnell
Book Abstract Algebra 3rd. ed. by David S. Dummit and Richard M. Foote, ISBN 0-471-43334-9
Office McBryde 516
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Room McBryde 658 9:05 a.m., MWF
Office Hrs Mon, Wed 10:00 a.m. to 11:20 a.m.
 Fri 10:00 a.m. to 11:30 a.m. and 3:00 p.m. to 3:45 p.m. (Tentative!)

In case of difficulty, E-mail me, or try office at other times, or make an appointment, or telephone me.

Webpages I will give you a link for a webpage. On this webpage I will put announcements, handouts which I have previously distributed in class, useful links, grades. To access the grades (and maybe other material), you will need a password which I will give you. Most handouts I will post on my webpages in HTML format (for immediate online viewing) and PDF format (for better quality viewing or printing).

Assessment Two 50 minute tests, 50 points each
 One two hour exam, 100 points
 Homework, 150 points
 Total: 350 points

Tests will be on Wednesday February 27 and Wednesday April 10

The final exam is on Saturday May 11, 1:05 p.m.–3:05 p.m. in the regular classroom McBryde 658 (i.e. as according to the “Spring Timetable of Classes”).

I will grade according to the following scale:

	A: 320–350	A–: 307–319
B+: 294–306	B: 281–293	B–: 268–280
C+: 255–267	C: 242–254	C–: 229–241
D+: 216–228	D: 203–215	D–: 190–202
	F: 000–189	

Homework You may (are even encouraged) to discuss homework between yourselves; however copying is, of course, forbidden. Homework which is handed in late will receive at most half credit (zero credit if received after I have given out solutions to the class).

Tests These will be fairly traditional, so in particular they will be closed book.

Make-ups There will be *no* make-ups. If it is impossible for a student to take a test, the part of the exam corresponding to the missed test will be weighted more heavily. The student *must* obtain my permission before! the test to use this option.

Syllabus and Objectives This course is the second half of the 5125–5126 sequence. Though these two courses barely scratch the surface of what is going on in Algebra today, they provide enough standard background material so that one can start reading papers in current Mathematical research related to Algebra. Also they provide the material on which the Algebra Prelim will be based on. For 5126, we will start by covering most of Chapters 12, 13 and 14. Chapter 12 covers the structure theorem for modules over a PID, with applications to finitely generated abelian groups, and rational and Jordan canonical forms. Chapters 13 and 14 are concerned with field theory and Galois theory. A highlight here is that the formula for solving a quadratic equation ($ax^2 + bx + c = 0$), which can be extended to cubic and quartic equations, cannot be extended to quintic equations. This should leave time for one or more topics (algebraic geometry, homological algebra, representation theory of finite groups).

Notation

$\mathbb{Z}$ integers	$\mathbb{Q}$ rational numbers
$\mathbb{R}$ real numbers	$\mathbb{C}$ complex numbers
$\mathbb{N}$ positive integers	$1, 2, \dots$ (excludes 0)
$\mathbb{Q}^+$ positive rationals	$\mathbb{R}^+$ positive reals
$\cup$ = union	$\cap$ = intersection
$\in$ = is an element of	$\notin$ = is not an element of
$\subseteq$ is a subset of	$A \setminus B = \{a \in A \mid a \notin B\}$
$\emptyset$ = empty set	iff = if and only if
$\forall$ = for all	$\exists$ = there exists
$\leq$ = subgroup	$\triangleleft$ = normal subgroup
ker = kernel	$\cong$ = is isomorphic to
$ S $ = order of S	$ G : H $ = index = $ G / H $
$\mathbb{N}_0$ = nonnegative integers	ch = characteristic of a ring

Honor System The Undergraduate Honor Code pledge that each member of the university community agrees to abide by states: “As a Hokie, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do.” For more information, please visit: <http://www.honorsystem.vt.edu>
The Honor Code applies to all graded work in this course.