

# Math 110, Summer 2013. James McIvor.

## Schedule of Lectures

Please check this page regularly for updates. Reading assignments are to be done **BEFORE** the lecture, and are all taken from Axler's book.

Lecture No.	Date	Title	Reading
1	June 24	Introduction. Real vector spaces.	pgs 4-12
2	June 25	Other fields, and vector spaces over them.	pgs 2-3
3	June 26	Direct sums of subspaces.	pgs 13-18
4	June 27	Span and linear independence.	pgs 24-27
5	July 1	Basis.	pgs 27-31
6	July 2	Dimension.	pgs 31-34
7	July 3	More on dimension.	pgs 31-34
	July 4	Holiday - no class!	Flatland - by Edwin Abbott Abbott (optional).
8	July 8	Linear maps - definition and examples.	pgs 38-41
9	July 9	Injectivity and surjectivity.	pgs 41-47
10	July 10	Null space and range.	pgs 41-47
11	July 11	The matrix of a linear map.	pgs 48-53
12	July 15	Isomorphisms, review.	pgs 53-58
	July 16	Midterm 1.	covers lectures 1-11 (up to page 53)
13	July 17	Operators and invariant subspaces. Restrictions.	pgs 76-79
14	July 18	Eigenvalues and eigenvectors 1.	pgs 76-79
15	July 22	Eigenvalues and eigenvectors 2 - diagonalizing.	pgs 87-90
16	July 23	Upper triangular form.	pgs 80-87
17	July 24	Summary of chapter 5.	chapter 5 (except 91-93)
18	July 25	Inner products and norms.	pgs 98-106
19	July 29	Orthonormal bases, gram-schmidt.	pgs 106-111
20	July 30	Orthogonal projections.	pgs 111-116
21	July 31	Linear Functionals, review.	pgs 117-118
	August 1	Midterm 2.	covers lectures 1-21 (mostly on 12-21)
22	August 5	Adjoins.	pgs 118-121
23	August 6	Self-adjoint and normal operators. Isometries.	pgs 128-131, 147-150
24	August 7	Complex Spectral Theorem.	pgs 132-137
25	August 8	Generalized eigenvectors.	pgs 164-167
26	August 12	Jordan Form.	pgs 173-176,183-187
27	August 13	Characteristic and minimal polynomials.	pgs 168-173, 179-182
28	August 14	Final review.	everything!
	August 15	Final Exam - full two hours	