

Diary

Updated: April 25, 2024.

| Meeting | Day | Topic | Reference | Assignment |
|---------|------|---|---------------|---------------------------|
| 1 | 15/1 | Vector spaces: definition and examples | §1B | <i>WS 1</i> |
| 2 | 18/1 | Subspaces, sums and direct sums | §1C | <i>WS 1</i> |
| 3 | 18/1 | Span, independence, bases | §2A, §2B | <i>WS 1</i> |
| 4 | 22/1 | Bases and dimension | §2B, §2C | <i>WS 2</i> |
| 5 | 25/1 | Linear maps, null spaces and range | §3A, §3B | <i>WS 2</i> |
| 6 | 25/1 | Fundamental Theorem of linear algebra | §3A, §3B | <i>WS 2</i> |
| 7 | 29/1 | Matrices associated to a linear map, Invertible morphisms | §3C, §3D | <i>WS 3</i> |
| 8 | 1/2 | Properties of invertible morphisms | §3D | <i>WS 3</i> |
| 9 | 1/2 | Products of vector spaces | §3E | <i>WS 3</i> |
| 10 | 5/2 | Quotient spaces | §3E | HW 1 , <i>WS 4</i> |
| 11 | 8/2 | Dual spaces | §3F | <i>WS 4</i> |
| 12 | 8/2 | Dual morphisms and annihilator subspace | §3F | <i>WS 4</i> |
| 13 | 19/2 | Invariant subspaces | §5A | <i>WS 5</i> |
| 14 | 22/2 | Minimal Polynomial | §5B | <i>WS 5</i> |
| 15 | 22/2 | Minimal Polynomial | §5B | <i>WS 5</i> |
| 16 | 26/2 | Upper-Triangular Matrices | §5C | HW 2 |
| – | 29/2 | Midterm 1 | M 1-15 | Midterm 1 |
| 17 | 11/3 | Diagonalizable Operators | §5D | <i>WS 6</i> |
| 18 | 14/3 | Discussion of Midterm 1 | | |
| 19 | 14/3 | Inner Product Spaces, Norm | §6A, 6B | <i>WS 6</i> |
| | | Orthonormal basis, Gram–Schmidt procedure | | |
| 20 | 18/3 | Riesz representability, Orthogonal Complement | §7A | <i>WS 7</i> |
| | | Adjoint Operator, Self-Adjoint and Normal Operators | | |
| 21 | 21/3 | Spectral Theorem | §7B | <i>WS 7</i> |
| 22 | 21/3 | Spectral Theorem | §7B | <i>WS 7</i> |
| 23 | 25/3 | Generalized Eigenvectors | §8A | HW 3 , <i>WS 8</i> |
| 24 | 28/3 | Generalized Eigenspace, Char. Polynomial | §8B | <i>WS 8</i> |
| 25 | 28/3 | Multiplicity of Eigenvalues and Jordan canonical form | §8B | <i>WS 8</i> |
| 26 | 8/4 | Jordan form and Tensor Product | §8C | HW 4 |
| - | 11/4 | Midterm 2 | M 16,17-25 | Midterm 2 |
| 27 | 15/4 | Tensor Product | §9D | <i>WS 9</i> |
| 28 | 18/4 | Tensor Product, Trace of an operator | §8D | <i>WS 9</i> |
| 29 | 18/4 | Multilinear maps | §9A, 9B | <i>WS 9</i> |
| 30 | 22/4 | (Alternating) Multilinear maps | §9C | |
| 31 | 25/4 | Determinant of an Operator | §9C | |
| 32 | 25/4 | Determinant of an Operator | §9C | |
| | 29/4 | | | HW 5 |
| | 2/5 | Revision | | |
| | 10/5 | Last day to submit Perusall comments | | |
| | 17/5 | Final Exam: 14:30 - 17:00 | CYM105 | |

- The reference concerns sections of the textbook.
- The first exam will cover the material from Meetings 1-15.
- The second exam will cover the material from Meetings 16, 17-25.
- WS means Worksheet. You don't have to turn them in, but they are the exercises that I expect you to know how to solve.
- HW means Homework. You need to turn these in and they will be graded.
- The final exam is commulative.