

## Lie Algebra Schedule

1. Wednesday 8/21: Syllabus, Introduction (including definition of Lie algebras)
  - ★ Readings: EW Section 1.1, Misra pages 1 and 2
  - ★ Suggested Homework: EW Exercise 1.1; Prove that every one-dimensional Lie algebra is abelian.
  
2. Friday 8/23: Basic Examples, Basis, and Dimension
  - ★ Readings: EW 1.2, Misra pages 2, 3, and 4
  - ★ Suggested Homework: Misra Problem 1.27 part i
  
3. Monday 8/26: Coordinate Matrices; Structure Constants and Subalgebras
  - ★ Readings: EW 1.3 and 1.7; Misra pages 2-6
  - ★ Suggested Homework: Misra problem 1.27 parts (ii), (iv), (xv – graduate only)
  
4. Wednesday 8/28: More Examples
  - ★ Readings: EW 1.3 and 1.7; Misra pages 2-6
  - ★ Suggested Homework: EW Exercises 1.1, 1.2, 1.3, 1.12 and Misra Problem 1.27 parts i, ii, iv, xv (graduate only)
  
5. Friday 8/30: Problem Presentations
  
6. Wednesday 9/4: More Subalgebras
  - ★ Readings Misra pages 5 and 6
  - ★ Suggested Homework Problems Misra 2.18 v, xi; EW Exercises 1.15,

7. Friday 9/6: Direct Sums and an introduction to ideals
  - ★ Readings: EW exercise 2.6 Misra problem 2.17, EW sections 1.3 and Misra pages 9-11
  - ★ Suggested Homework: EW 2.6 ; Misra 2.18 xi,
  
8. Monday 9/9: Ideals and Derivations
  - ★ Readings: EW Sections 1.3, 1.5, and 1.6; Misra pages 9-13
  - ★ Suggested Homework: Misra 2.18 iii (graduate), vii, xiii, xvii EW exercise 1.18, 2.5, 2.13 and 2.10
  
9. Wednesday 9/11: Another Look at Ideals / Problem Session
  
10. Friday 9/13: Problem Presentations
  
11. Monday 9/16: Quotients and Homomorphisms (basic definitions)
  - ★ Readings: EW sections 1.4 and 2.2; Misra pages 16-20
  - ★ Suggested HW: EW exercise 1.6. 2.3
  
12. Wednesday 9/18: Problem Session (with presentations)
  
13. Friday 9/20: First Big Quiz
  
14. Monday 9/23: Homomorphism / Isomorphism Examples
  - ★ Readings: EW sections 1.4 and 2.2; Misra pages 16-20
  - ★ Suggested HW: Read Misra's proofs of theorems 3.8, 3.10, and 3.11 (understand well enough to discuss)

15. Wednesday 9/25: Presentations of Theorems 3.8, 3.10, and 3.11 (We're "passing the microphone" so everyone will be responsible for saying something)

- ★ Readings Misra pages 16-20

- ★ Suggested HW: EW Exercise 2.8, Misra problems i, vi, vii