
<lecture#>. <date> -- <section#> <topic> -- <problems>

1. 1/09 -- 0.1-3 What is numerical analysis? -- 5,6,7
 2. 1/11 -- 0.4 Bisection; Errors -- 9,14,15
 3. 1/13 -- 0.4 Computer Arithmetic -- 13,21,22
 4. 1/18 -- 0.5-7 Computer Arithmetic; Measuring Efficiency -- 17,27,33
 5. 1/20 -- 1.2 Bisection and Linear Interpolation -- 2,5,11
 6. 1/23 -- 1.3,5 Newton's Method and Fixed-Point Iterations -- 13,18,38
 7. 1/25 -- 1.5 Errors and Convergence -- 22,23,24
 8. 1/27 -- 1.5 Aitken Acceleration and Polynomial Roots -- 40,41,42
 9. 1/30 -- 1.6;7.1 Multiple Roots; Golden Section -- 25,26,27
 10. 2/01 -- 2.1 Introduction to Linear Algebra -- 4,5,6
 11. 2/03 -- 2.2 Elimination Methods -- 11,13,14
 12. 2/06 -- 2.2 LU Decomposition -- 15,17,18
 13. 2/08 -- 2.2 Cholesky Decomposition; Cost of Elimination -- 21,28,30
 14. 2/10 -- 2.2,4 Improve Stability by Pivoting -- 25,27,29,35
 15. 2/13 -- 2.4 Pivoting; Norms -- 45,64,66
 16. 2/15 -- 2.9 Norms and Condition Numbers-- 42,43,46
 17. 2/17 -- 1.7 Multidimensional Newton's Method -- 46,47,48
 18. 2/20 -- Review of Chapters 0,1,2.
 19. 2/22 -- Exam 1
 20. 2/24 -- 3.1 Lagrange and Neville Interpolation -- 1,6,8
 21. 2/27 -- 3.2 Divided Differences -- 12,14,30
 22. 3/01 -- 3.3-5 Splines -- 33,35,37
 23. 3/03 -- 3.6 Least Squares Approximation -- 70,71,75
 24. 3/06 -- 3.7 Conditioning and Errors -- 59,60,61
 25. 3/08 -- 4.1,2 Chebychev Polynomials; Rational Approximations -- 13,21,23
 26. 3/10 -- 4.3 Fourier Series -- 30,31,32
 27. 3/13 -- 5.1 Interpolation for Derivatives and Integrals -- 4,11,14
 28. 3/15 -- 5.1 Richardson Extrapolations -- 19,24,27
 29. 3/17 -- 5.2 Newton-Cotes formulas; Composite Rules -- 31,32,34
 30. 3/27 -- 5.2 Romberg Integration -- 35,37,40
 31. 3/29 -- 5.6 Gaussian Quadrature -- 71,73,75
 32. 3/31 -- Review of Chapters 3,4.
 33. 4/03 -- Exam 2
 34. 4/05 -- 6.1,2 Taylor-Series and Euler Methods -- 1,4,5,7
 35. 4/07 -- 6.3,4 Runge-Kutta and Multistep Methods -- 9,15,16
 36. 4/10 -- 6.4 Predictor-Corrector Methods -- 21,29,33
 37. 4/12 -- 6.5 Higher-Order Equations and Systems -- 40,43,44
 38. 4/14 -- 6.6 Stiff Equations -- 50,51,53
 39. 4/17 -- 6.7 The Shooting Method -- 56,58,59
 40. 4/19 -- 6.7 Finite Differences -- 60,61,62
 41. 4/21 -- 6.8 Characteristic-Value Problems -- 72,74,76
 42. 4/24 -- Review of Chapters 0,1,2
 43. 4/26 -- Review of Chapters 3,4
 44. 4/28 -- Review of Chapters 5,6
-