Scope of midterm

Ch.3, Sec 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
Ch.4, Sec 4.2, 4.3, 4.4, 4.6, 4.7, 4.10, 4.11
Ch.5, Sec 5.1, 5.2, 5.3, 5.4, 5.5 (excluding 5.5.2), 5.6.2

Read the textbook.

Chapter 3

3.2, 3.3 Bisection method (especially take note of Eq. (3.6) and (3.7) on how the numerical error is determined in bisection method)
3.4 Regula Falsi method. This is a variation of bisection method.
3.5 Newton's method
3.6 Secant method
3.7 Fixed-point iteration method

Chapter 4

4.2, 4.3 Gauss elimination, pivoting
4.4 Gauss-Jordan elimination
4.6 Inversion of matrix
4.7 Iterative methods
-- Jacobi method
-- Gauss-Seidel method
4.10 Error estimate for the solution of a linear system; Norms, Condition number
4.11 Ill-conditioned system

Chapter 5

5.1, 5.2 Linear least-squares regression
5.3 Curve fitting with nonlinear equations
5.4 Curve fitting with quadratic and higher-order polynomials
5.5 Interpolation using a single polynomial ("global" interpolation) **skip 5.5.2**
-- Direct matrix solution
-- Lagrange interpolation polynomial
5.6 Piecewise interpolation **skip 5.6.3**
-- Quadratic spline