ACADEMIC CALENDAR

MATH3511 – NUMERICAL ANALYSIS II

SPRING SEMESTER 2018

http://www.phys.uconn.edu/~rozman/Courses/m3511_18s/

Last modified: April 24, 2018

TUESDAY	THURSDAY
Jan 16th **Lecture 1** The Jacobi iterative method. Sec. 7.3, pp. 456–459.	Jan 18th **Lecture 2** The Gauss-Seidel iterative method. Sec. 7.3, pp. 460–462. Homework 1 assigned: due Jan 25
Jan 23rd **Lecture 3** Norms of vectors and matrices. Sec. 7.1, pp. 438–447. Eigenvalues and eigenectors. Sec. 7.2, pp. 450–454.	Jan 25th **Lecture 4** Relaxation technique for linear systems. Sec. 7.4, pp. 469–471. Homework 2 assigned: due Feb 1
Jan 30th **Lecture 5** Convergence of iterative methods. Error bounds and iterative refinement. Sec. 7.5, pp. 476–482.	Feb 1st **Lecture 6** Error bounds and iterative refinement. Sec. 7.5, pp. 476–482. Method of steepest descent. Homework 3 assigned: due Feb 8
Feb 6th **Lecture 7** Methods of steepest descent and conjugate gradient	Feb 8th **Lecture 8** Linear algebra and eigenvalues. Sec. 9.1, pp. 569–575. The power method. Sec. 9.3, pp.585–591. Homework 4 assigned: due Feb 15
Feb 13th **Lecture 9** The inverse power method. Deflation methods. Sec. 9.3, pp. 592–597.	Feb 15th **Lecture 10** Orthogonal matrices and similarity transformations. Sec. 9.2, pp. 578–591. Homework 5 assigned: due Mar 1
Feb 20th **Lecture 11** Hausholder transformation. Sec. 9.4, pp. 602–609.	Feb 22nd **Midterm I**

Tuesday	Thursday
Feb 27th **Lecture 12** QR algorithm. Sec. 9.5, pp. 610–618.	Mar 1st **Lecture 13** Singular Value Decomposition. Sec. 9.6, pp. 624–632. Homework 6 assigned: due Mar 8
Mar 6th **Lecture 14** Discrete least squares approximation. Sec. 8.1, pp. 505–513.	Mar 8th **Lecture 15** Review session.
Mar 13th **Spring recess – No classes**	Mar 15th **Spring recess – No classes**
Mar 20th **Lecture 16** Approximation of functions. Orthogonal polynomials. Sec. 8.2, pp. 517–524.	Mar 22nd **Lecture 17** Discrete Fourier transform. Sec. 8.5, pp. 545–553. Homework 7 assigned: due Mar 29
Mar 27th **Lecture 18** Fast Fourier transform. Sec. 8.6, pp. 555-565.	Mar 29th **Lecture 19** Nonlinear systems of equations. Newton's method. Sec. 10.2, pp. 651–657. Homework 8 assigned: due Apr 5
Apr 3rd **Lecture 20** Steepest descent method. Sec. 10.4, pp. 666–672.	Apr 5th **Midterm II**
Apr 10th **Lecture 21** Boundary value problems for ODEs. Sec. 11.1, pp. 686–692.	Apr 12th **Lecture 22** The shooting method for nonlinear problems. Sec. 11.2, pp.693–698. Homework 9 assigned: due Apr 19
Apr 17th **Lecture 23** Finite difference method for boundary value problems. Sec. 11.3, pp.700–703.	Apr 19th **Lecture 24** Elliptic partial differential equations. Sec. 12.1, pp.734–740. Homework 10 assigned: due Apr 26
Apr 24th **Lecture 25** Parabolic partial differential equations. Sec. 12.2, pp.743–740. Von Neumann stability analysis (handout).	Apr 26th **Lecture 26**
May 1st **Week of Finals**	May 3rd **Week of Finals**