1. Computational Mathematics I
MATH426011: MWF 10:10-11:00 EWG207
(a) Instructor: Zhang, Shangyou, Ewing 310, 831-0625, szhang@udel.edu
(b) Office hours: M: 11:00-12:00, T: 10:00-11:00 W 11:00-1:00 or by appointment
(c) Additional course materials:
http://www.math.udel.edu/~szhang/teach/426

2. Textbook:

3. Coverage and Exam.
(a) Exam 1, Wed 10/4/2017
1.1-1.3 Floating point, conditioning, stability
2.1 polynomial interpolation
2.2-2.4 LU factorization
2.5-2.6 row pivoting
2.7-2.8 Continioning
3.1-3.2 Overdetermined linear system, normal equation
3.3-3.4 QR factorizations
(b) Exam 2, Exam 2, Wed 11/15/2017
4.1-4.2 fined point iteration
4.3-4.4 Newton’s method, interpolation-based
4.5-4.6 Nonlinear, quasi-Newton methods
5.1-5.2 interpolation
5.3 cubic spline
5.4-5.5 finite differences, differentiation matrices
5.6 Numerical integration
5.7 Adaptive quadrature
6.1-6.2 Euler’s method
6.3 systems of differential equations
6.4 Runge-Kutta methods
(c) Final Exam: All above sections and
6.5 Adaptive Runge-Kutta
6.6-6.7 Multistep methods
6.8 stability and convergence

4. Workload and grade distribution.
(a) 2-hour final exams(1/1): 200 points.
(b) 50-minute exams(2/2): 240 points.
(c) homework assignments(10/12): 120 points.
(d) computer projects(3/3): 30 points.
(e) quizzes(6/8): 30 points.
(f) online computer labs(10/15): 45 points.
(g) attendance checks(10/12): 30 points.
(h) Guaranteed a course grade of A-, B-, C-, and D- or better if a student’s percentile is 90, 80, 70, and 60 or above, respectively, unless the total point of one category is below 50%.

5. Policy.
(a) No makeup. Late work is not acceptable, except exams. The two exams are mandatory.
(b) For university mandatory, the average of a category will be used for a missing work in the category, provided 50.1% of the work in the category is accomplished.
(c) All homework assignments are due at the beginning of class on the due date. All problems and solutions, in all assignments and exams, must be written in the order assigned.
(d) The work one turns in must be completely the person’s own. Academic integrity is strictly enforced:
http://www.udel.edu/judicialaffairs/ai.html

6. Communication.
(a) Check class website if you miss some handouts/information.
(b) Email szhang@udel.edu.
(c) You will receive your grades, letter grade, and class ranking periodically by email.