

M353 Syllabus (S. Zhang)

Last update: February 9, 2009.

1. ENGINEERING MATHEMATICS III (numerical methods)

- (a) Section: Math353-012, Spring 2009
- (b) Lectures: MWF 8:00AM - 8:50AM GOR320
- (c) Instructor: Zhang, Shangyou, Ewing 310, 831-0625, szhang@udel.edu
- (d) Office hours: MTu 10:00-11:00, WTh:00 11:00-12:00 or by appointment
- (e) Additional information/materials:
<http://www.math.udel.edu/~szhang>

2. Textbook:

- (a) Numerical Analysis, by Sauer.

3. Coverage and Exam.

- (a) E1, Wed, 3/11/09
0.2-0.3 (binary, floating point)
1.1-2 (bisection, fixed-point)
1.4, 1.5.1 (Newton, secant)
2.1-3, 2.4.1 (GE, LU)
- (b) E2, Wed, 4/8/09
2.5-6 (iterative methods)
3.1-2, 3.5 (interpolation)
4.1 (least squares)
5.1 (numerical differentiation)
- (c) E3, Wed, 5/6/09
5.2-5 (numerical integration)
6.1, 6.3-4, 6.6 (ODE, IVP)
7.1-2 (BVP, linear and nonlinear shooting)
- (d) Final Exam, to be announced on UD website:
Above sections, and
8.1-3 (PDE)
9.1, 10.1 (random number, FFT)

4. Workload and grade distribution.

- (a) 1 final exam: 200 points.
- (b) 3 hourly exams: 300 points.
- (c) 12 homework assignments: 120 points.
- (d) 20 computer labs: 60 points.
- (e) 5 computer projects: 50 points.
- (f) 10 attendance checks: 30 points.
- (g) Bonus points(≤ 20): for more/extraordinary/creative methods or the first one to find a major error in handouts and lectures.
- (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 above is below 50%.

- (i) Guaranteed a course grade of A-, B-, C-, and D- or better if a student's class ranking is among top 10, 35, 65, and 80 percent, respectively, unless the total point of one category above is below 50%.

5. Policy.

- (a) Makeup or late work is not acceptable, except the final exam. The final exam is mandatory.
- (b) For university mandatory, the average of a category will be used if a student misses more times than the number of drops. But the student must provide a valid evidence for each absence, including the class attendance dropped.
- (c) At least one, likely two or more, homework, lab, attendance grades will be dropped.
- (d) All homework assignments are due at the beginning of class on the due date. All problems and solutions must be in the order assigned, in both homework assignments and exams.
- (e) One may seek help from others, but 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 (linked from above website) if you miss some handouts/information.
- (b) Email szhang@udel.edu.
- (c) Use an anonymous suggestion box at class website.
- (d) You will receive your grades, letter grade, and class ranking regularly by email.