Math 3457 -B01 Numerical Calculus and differential equations
B-term -Winter 2015

Instructor: Zhongqiang Zhang
Office: 302A Stratton Hall Phone: 508-831-4936 (X4936)
Email: zzhang7@wpi.edu http://www.wpi.edu/~zzhang7/
Office hours: Monday 3:00-5:00 and by appointment

Teaching assistant TBA
Office hours: TBA

Class meetings: MTRF 2:00-2:50 OH223
Conferences: Wednesday 2:00-2:50 OH223

Textbook
Burden, Faires, and Burden, Numerical Analysis, 10th edition, Cengage Learning

Other references:

Course Descriptions
This course provides an introduction to modern computational methods for differential and integral calculus and differential equations. Both theoretical understanding of methods and their practical performance will be emphasized. Computation is an essential component of the course, and there will be frequent computing assignments. Undergraduate credit may not be earned for both this course and for MA 3255/CS 4031.

The textbook is intended to serve as a background reference on most but by not all of the material covered in class. You will be responsible for knowing everything delivered in class.

Students are highly recommended to program with MATLAB but other programming environments or languages are allowed when they are suitable for an assignment.

Main topics

- Interpolation (Chapter 3)
- Approximation (Chapter 8)
- Numerical integration (Chapter 4)
- Initial value problems (Chapter 5)
- Boundary value problems (Chapter 11)

Recommended background: Calculus sequence, linear algebra, and differential equations.

Accessments
Homework
Problems will be assigned for each covered section of the book and will be posted on myWPI. Make sure that you turn in your homework on time as late homework will not be accepted and will be graded as zero. If you have to miss a conference, turn in your homework to me before class meetings on Monday or Tuesday.
Midterms
There will be two one-hour in-class midterms. There are no make-up midterms. (Thursday 11/12, Tuesday 12/01)

Final Exam
The final exam will be on Dec. 17 from 6-8pm (To be discussed).

Grading
Homework = 40% (weekly)
Midterms = 30% (two mid-terms)
Final Exam = 30% (on Dec. 17th, 6:00pm -8:00pm)

Grading policy
Make sure that your work is legible and done neatly; otherwise you will receive no credits for it. No credits will be given if you have only answers to assignments and exams. You need to show both your answer and the work leading to it with proper wording or expressions. A rubric will be posted at myWPI.

Some statements
Cell phones and all electric devices should be turned off or muted.
Academic Dishonesty is not tolerated. Please be aware of WPI’s Academic Honesty Policy http://www.wpi.edu/offices/policies/honesty/policy.html.

Academic resources
Math Tutoring Center
The Mathematics Tutoring Center offers help in calculus, differential equations, statistics, and linear algebra. The Mathematics Tutoring Center is located outside of Stratton Hall 002A and is open Monday-Thursday 10am-8pm and Friday 10am-4pm. You can stop by at any time - no appointment is needed. The current schedule can be found at https://www.wpi.edu/Images/CMS/Mathematics/Final_Schedule.pdf

Matlab Crash Course
This term the Matlab crash course can be registered at https://m.wpi.edu/webapps/regi/.

Disability services
If you are eligible for course adaptations or accommodations because of a disability or if you have medical information to share with me, please make an appointment with me as soon as possible. If you are not sure about the eligibility for course adaptations or accommodations, please contact the Disability Services Office (DSO) (http://www.wpi.edu/offices/disabilities/), which is located in the Student Development and Counseling Center, 124 Daniels Hall and the phone number is 508-831-4908, e-mail is DisabilityServices@wpi.edu

Academic honesty
Each student is expected to familiarize him/herself with WPI’s Academic Honesty policies which can be found at http://www.wpi.edu/offices/policies/honesty. All acts of fabrication, plagiarism, cheating, and facilitation will be prosecuted according to the university’s policy. If
you are ever unsure as to whether your intended actions are considered academically honest or not, please contact me.