Welcome to Math 6375 - Numerical Analysis
At The University of Texas in the Rio Grande Valley, Spring 2017

Instructor:	Dr. Josef Sifuentes
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	Please include MATH6375 in the subject line
	and your full name somewhere in the text.
Office:	MAGC 3.614
Office hours:	Monday and Wednesday 1:30 – 2:30 pm, in MAGC 3.614 (office)
	or by appointment, office hours are subject
	to change, notification will be made by email.
	An **online**, virtual and all around more science fictioneque version
	will also be established.
Class Time	Monday and Wednesay, 3:05 – 4:20 pm (Face to Face)
	Anytime, more or less (online)
Class Location	ENGR 1.262 (Edinburg Campus) and in the ethers of the cyberworld

Calendar

Tuesday	**Jan. 17**	Classes at UTRGV begin
Wednesday	**Jan. 18**	First day of Math 6375 (You pumped or what?!)
Wednesday	**Feb. 1**	Census day (Last day to Drop without it
		appearing on the transcript)
Thursday	**Mar 8**	**First Midterm Exam**
Monday-Friday	**Mar. 13 -18**	Spring Break
Wednesday	**Apr. 12**	**Online Course Evaluations Open**
Thursday	**Apr. 13**	Drop / Withdrawal Deadline
Thursday	**May 3**	**Second Midterm Exam**
Thursday	**May. 3**	**Online Course Evaluations Close**

Required Text:

- *Numerical Linear Algebra* by Lloyd Trefethen and David Bau, III SIAM 1997

- *An Introduction to Numerical Analysis* by Endre Süli and David Mayers Cambridge 2003

Prerequisites: MATH 2318 Linear Algebra, MATH 2415 Calculus III (Vector Calculus), experience or course in computer programming.

Class Description and Objectives: Numerical methods approximate solutions to mathematical problems that occur in computer science, the physical sciences and engineering. This course will describe the implementation of these methods and analyze their performance and computational requirements for application. More specifically, we will cover numerical methods in linear algebra, interpolation and function approximation, computer arithmetic, differential equations and nonlinear equations. We will connect these topics to contemporary research in mathematics and applications to science and engineering.

The successful student will be able

1. Factor matrices into different matrix forms and apply the factorizations to problems in linear algebra as well as analyze the complexity of these approaches.

2. Interpolate data using polynomials as well as finding "best fit" continuous functions to describe data sets and describe the error in these approximations.

3. Approximate definite integrals and analyze their techniques.

4. Approximate solutions to differential equations and analyze their techniques.

5. Approximate solutions to nonlinear, scalar valued equations and analyze their techniques.

6. Understand how computers implement arithmetic and potential loss of accuracy in numerical methods that could result.

Grading policy: The grade cutoffs **may** be adjusted to reflect the mean of the final averages. The lower bound of the cutoffs will not be curved upward.

Homework Aggregate	50%	$90\% \leq$ A
Midterm 1	25%	$80\% \leq$ B $< 90\%$
Midterm 2	25%	$70\% \leq$ C $< 80\%$
		$60\% \leq$ D $< 70\%$
		F $< 60\%$

Due to Federal Laws protecting student privacy rights, I cannot discuss grades over unsecured email or telephone.

Homework: Homework assignments will be posted approximately weekly. Late homework is not generally accepted and is at the discretion of the instructor. Working with others on the homework assignments is **strongly encouraged**, however all homework assignments **must be written up and understood independently.** This means that I encourage working together to understand the material and homework assignments, but you should be independently writing your own homework answers and code for the assignments. **Sharing or exchanging code is prohibited and will result in a score of an F**. Viewing past homework or homework solutions is **not allowed**.

Exams: There will be two midterm exams intended to demonstrate a mastery of the course material. The dates of the exam are in the Calendar

Attendence and Making up Work Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations. If there is an emergency precluding advance notice, please notify me as soon as possible and provide written documentation as soon as you are able. If you are ill or injured, please submit a note from a health care professional excusing you from work or school. It is your responsibility to schedule a make-up exam, which can only be given if written evidence of an excused absence is provided in a timely manner.

Scholastic Integrity As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

Sexual Harassment, Discrimination, and Violence In accordance with UT System regulations, your instructor is a "responsible employee" for reporting purposes under Title IX regulations and so must report any instance, occurring during a student's time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at `www.utrgv.edu/equity`, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

Students with Disabilities If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at `ability@utrgv.edu`. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at `ability@utrgv.edu`.

Course Drops According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the "3-peat rule" and the "6-drop" rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

Mandatory Course Evaluation Period Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (`http://my.utrgv.edu/home`); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available

Apr 12 – May 3 for this course.

Copyright policy: All printed materials including (but not limited to) handouts, quizzes, exams,