

**Instructor:** TBA

**Contact Information:** office: TBA, phone: TBA, e-mail: TBA

**Office Hours:** TBA

**Prerequisite:** MATH 2318 (Linear Algebra), MATH 3350 (Intro to Math Proof), and 9 additional advanced hours of MATH, all with grades of “C” or better.

**Textbook (recommended):** A Student’s Guide to the Study, Practice, and Tools of Modern Mathematics, Donald Bindner and Martin Erickson, CRC Press

**Useful Resource:** <https://en.wikibooks.org/wiki/LaTeX>

**Course Description:** Students will complete a major mathematical project communicating its results in oral and written form.

**Computers/Calculators** The use of computers will be required on this project course.

**Final Exam:** The project paper and presentation will serve as final exam.

**Grading policy:** [90%, 100%]: A, [80%, 90%): B, [70%, 80%): C, [60%, 70%): D, [0%, 60%): F

- Project Preparation and Participation 20%
  - MathScinet Literature Search and Bibliography
  - L<sup>A</sup>T<sub>E</sub>X Mathematical Typesetting
  - Resume Preparation using LaTeX
  - Mathematics Software (as needed for the project) (Mathematica, Maple, Maxima, Sage, Matlab, Octave, Geogebra, etc.)
  - Other as per instructor
- Project Paper 40% (students cannot pass the class without completing the Project Paper)
- Project Presentation 40% (students cannot pass the class without Project Presentation)

### **Project Presentation\_Format:**

1. The length of the presentation is 10 minutes with 5 minutes questions. PRACTICE!!!
2. Make sure you speak loudly.
3. Know how to pronounce foreign names.
4. Must be done using LaTeX.
5. Overleaf is recommended. Check that you can download PDF file to a computer, and know how to open it with Adobe Acrobat Reader, and how to make it full screen.
6. Don’t have too many slides. (around 15 slides for 10 minutes) First page: title, you name; faculty advisor’s name; Institute; Example code:
  - `\title[BiCGSTAB on GPUs]{Krylov Subspaces in Practice: BiCGSTAB on GPUs}`
  - `\author[J. Cisneros, a. Balogh]{Jorge Cisneros\Faculty Advisor: Andras Balogh}`
  - `\institute[]{}{School of Mathematical and Statistical Sciences\The University of Texas Rio Grande Valley}`

- `\date[Math Project Presentation]{Mathamatics Project Presentation, May 7, 2016}`
7. Don't use `\tableofcontents{}`. There is no time for it.
  8. Brief history, or introduction of the problem 1 page.
  9. Make sure you explain everything, lie you would to someone who does not know much mathematics. Most math faculty does not understand what others are doing.
  10. At least one figure on one page, can be more if needed.
  11. At the end: 1 page References. Example:
    - `\begin{frame}`
    - `\frametitle{References}`
    - `\footnotesize{`
    - `\begin{thebibliography}{99} % Beamer does not support BibTeX so references must be inserted manually as below`
    - `\bibitem[Smith, 2012]{p1} John Smith (2012)\newblock Title of the publication\newblock \emph{Jour Name} 12(3), 45 -- 678. \bibitem....`
    - `\end{thebibliography}}`
    - `\end{frame}`
  12. No need or time for sections and subsections.
  13. Keep things simple.

### **Project Report Format:**

1. Minimum 5 pages long, no maximum requirement, but longer does not necessarily mean a better grade.
2. No manipulation of font size or page margin, just default settings with `\documentclass[]{article}`
3. LaTeX Commands to use:
  - (a) `\title{}`
  - (b) `\author{}`
  - (c) `\maketitle`
  - (d) `\begin{abstract} ... \end{abstract}`
  - (e) `\section{Introduction}` The introduction must contain history, and at the end of introduction brief explanation of what each further section will do. Reference to further section must be made using "in Section `\ref{xyz}` and using `\label{xyz}` in the title of section you are referencing to.
  - (f) If you have theorems and proofs use appropriate environments.
  - (g) Figures must be labeled and referenced using the labels.
  - (h) Equations must be numbered, labeled and referenced using labels.
  - (i) If you have a Matlab or Mathematica code include it using `\appendix \section{Matlab Code or something like this}`
4. No forced page breaks, no separate title page, no separate references. Everything has to be continuous.
5. No forced placement of figures. Let LaTeX do its job.
6. Must use `\cite{}` command for citation references.
7. Last section must be `\section{Conclusion}` where you summarize what your report was about.

**NOTE: The syllabus is subject to change.**

## UTRGV POLICY STATEMENTS

**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](mailto: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](mailto:ability@utrgv.edu).

**Mandatory Course Evaluation Period:** Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (<http://my.utrgv.edu>); 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: November 18 - December 8

**Class Attendance:** 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.

**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](http://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.

**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.

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**Important Dates:** The UTRGV academic calendar can be found at <http://my.utrgv.edu> at the bottom of the screen, prior to login. Important dates for Spring 2017 include:

**January 16:** MLK Holiday and Day of Service

**January 17:** First day of class for full semester

**January 30:** Last day to add a class for spring 2017 semester

**March 13 – 18:** Spring Break, no classes

**April 13:** Last day to drop (DR grade) a class or withdraw (grade of W)

**April 14 – 15:** Easter holiday, no classes

**May 3:** Last day of classes for full semester

**May 4:** Study Day, no classes

**May 5 - 11:** Final Exams

### **Course Student Learning Outcomes: After completing this course students will**

1. Demonstrate in–depth knowledge of Mathematics, its scope, application, history, problems, methods, and usefulness to mankind both as a science and as an intellectual discipline.
2. Identify, formulate, and analyze real world problems with statistical or mathematical techniques.
3. Utilize technology as an effective tool in investigating, understanding, and applying mathematics.
4. Communicate mathematics effectively to mathematical and non–mathematical audiences in oral, written, and multimedia form.

### **Intended Student Learning Outcomes:**

#### **Students completing the B.S. program in Mathematics will**

1. Demonstrate in-depth knowledge of Mathematics, its scope, application, history, problems, methods, and usefulness to mankind both as a science and as an intellectual discipline.
2. Demonstrate a sound conceptual understanding of Mathematics through the construction of mathematically rigorous and logically correct proofs.
3. Identify, formulate, and analyze real world problems with statistical or mathematical techniques.
4. Utilize technology as an effective tool in investigating, understanding, and applying mathematics.
5. Communicate mathematics effectively to mathematical and non-mathematical audiences in oral, written, and multi–media form.

The new university policy requires all email communication between the University and students be conducted through the students' official University supplied Email account. Therefore, please use your UTRGV assigned email for any future correspondence with UTRGV faculty and staff.

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