

Richard D Myers, Ph.D.

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Courses Taught

Calculus I, MATH 1431, University of St. Thomas: Summer 2006

Calculus II, MATH 1432, University of St. Thomas: Fall 2005, Spring 2006, Fall 2006

Calculus III, MATH 2431, University of St. Thomas: Spring 2007

Differential Equations, MATH 2343, University of St. Thomas: Fall 2005, Fall 2006

Intro to Technical Computing, MATH 2338, University of St. Thomas: Spring 2007

Numerical Analysis, MATH 3339, University of St. Thomas: Fall 2005, Spring 2007

Linear Algebra, MATH 3334, University of St. Thomas: Spring 2006

Probability, MATH 3335, University of St. Thomas: Fall 2006

Real Analysis, MATH 4331, University of St. Thomas: Fall 2006

Junior Research Seminar, MATH 3181, University of St. Thomas: Fall 2005, Spring 2006, Fall 2006

Senior Research Seminar, MATH 4181, University of St. Thomas: Spring 2006, Fall 2006

Independent Study, MATH 4392, University of St. Thomas: Spring 2006, Summer 2006, Fall 2006

Courses Developed

Junior/Senior Research Seminar, MATH 3181/4181, University of St. Thomas

Introduction to Technical Computing, MATH 2338, University of St. Thomas

Undergraduate Research Supervision

Michael Deeb - *The Mathematics Behind Basketball*, Fall 2006

Ashley Gibbs - *Mathematics of Stringed Instruments*, Fall 2006

David Gutierrez - *The Use of Mathematics in Predicting Human Strength Performance*, Fall 2006

Kulvir Kaur - *The Techniques of Teaching Mathematics in Grades 8-12*, Fall 2006

Hai Le - *The Mathematics of Digital Photography*, Fall 2006

Michael Nguyen - *P vs. NP*, Fall 2006

Claudia Oramas - *Stabilization of Structures*, Fall 2006

Linh Tran - *Mathematics and Pool*, Fall 2006

Mary Tapado - *The Golden Mean*, Fall 2006

Giselle Ramos-Bryan - *Pascal's Triangle*, Spring 2006

Moses Khan - *The Relevance of Mathematics in Our Daily Lives*, Spring 2006

Ashley Gibbs - *Bezier Curves*, Spring 2006

Michael Nguyen - *Cryptology: The Study of Cryptography and Cryptanalysis*, Spring 2006

Janie Garcia - *Tomography: A mathematical Background for Medicine's Image Machine*, Spring 2006

Randhi Panapitiya - *Mathematical Relationships with Traffic Flow*, Spring 2006

Robin Stone - *Chaos, Fractals, and Perlin Noise in the Generation of Virtual Landscapes*, Spring 2006

Mary Tapado - *Wallpaper Patterns*, Spring 2006

Janie Garcia - *Galileo Galilei: His Life, His Work*, Fall 2005

Moses Khan - *The Life and Philosophy of Pythagoras*, Fall 2005

Dominic Novak - *Algorithmic Composition: How can math be used in the composition of music?*, Fall 2005

Giselle Ramos-Bryan - *Math in Art: Prospective Geometry*, Fall 2005

Robin Stone - *Unlocking Young Minds: Methods of Teaching Mathematics*, Fall 2005

The University of St. Thomas Research Symposium (Sponsored Students)

Ashley Gibbs - *Bezier Curves in Application*, Spring 2006

Christopher LaVallee - *The Use of Mathematics in the Design of a Long-Bow*, Spring 2006

Academic Appointments

Sept 2005 – Aug 2007

Visiting Assistant Professor of Mathematics, University of St Thomas – Houston, TX

- Taught undergraduate courses across calculus, linear algebra, probability, differential equations, and numerical analysis.
- Supervised undergraduate research and developed new curriculum offerings.
- Served on departmental curriculum revision committee.
- Served as department library liaison.
- Developed a computer science minor for the Mathematics Department.

Professional Service

Curriculum development and revision, University of St. Thomas

Departmental computing facilities director, Mathematics Dept, University of St. Thomas

Research Interests

- Numerical analysis for PDEs and ODEs
- Time integration methods and stability theory
- Adjoint methods and optimal control
- Scientific computing and high-performance simulation
- Computational fluid dynamics and pipeline flow modeling

Research Experience

Sept 2007 – Mar 2025

Software Development Scientist, DNV

- Conducted long-term applied research in numerical methods for transient flow simulation.
- Developed, analyzed, and validated time integration schemes with provable stability and accuracy properties.
- Bridged theoretical numerical analysis with large-scale production simulation codes.
- Strong communicator of complex technical concepts to both expert and non-expert audiences
- Proven record of long-horizon technical ownership and sustained innovation

Publications

May 2019

Step Doubling for Pipeline Flow

This paper defines and studies a simple, efficient method for discretizing pipeline equations in time.

Todd F Dupont, Richard D Myers

onepetro.org/PSIGAM/proceedings-abstract/PSIG19/PSIG19/PSIG-1923/2121 (Paper presented at the PSIG Annual Meeting, London, UK, May 2019)

Education

Sept 2003 – Aug 2005

University of Houston–University Park, PhD in Mathematics – Houston, TX

- Dissertation: *Numerically Consistent Approximations for Optimal Control Problems Applied to Stiff Chemical Systems*
- Abstract: In the context of optimal control problems of state-finding and time-based controls, adjoint discretizations for Runge-Kutta methods were developed that converge at the same rate as the solution and objective function.
- Advisor: Prof. Jiwen He
- github.com/rdm375/RichardMyers-Dissertation/

Sept 2000 – May 2002

University of Houston–University Park, MS in Applied Mathematics – Houston, TX

Focused on Numerical Analysis and Scientific Computing: Numerical ODEs, PDEs, Linear Algebra, Optimization, and Parallel Programming.

Sept 1995 – May 2000

University of Houston–University Park, BS in Mathematics – Houston, TX

- Graduated Magna Cum Laude

Technical Skills

Platforms: Linux, Windows, WSL

Languages: Python, FORTRAN, C++, Bash

Automatic Differentiation: Odyssee, Tapenade

Parallel Programming: MPI, OpenMP

Environments: GCC, Clang, Make/CMake, MS Visual Studio, VS Code, TFS

Document Processing: LaTeX, Markdown, HTML

Research Areas: Numerical Analysis, Scientific Computing, Signal Processing, Machine Learning