Henry Ickes, Ph.D

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Education

- Baylor University
  - Ph.D Mathematics, 2022
    - Dissertation: *Characterizing Smoothness of Solutions…* (full title below)
    - Mentor: Dr. Johnny Henderson
- Texas State University – San Marcos
  - M.S. Mathematics, 2018
    - Thesis: *A Solid Object Floating in a Bath of Three Fluids*
      - Later refined and published as *The Existence of…* (below)
    - Mentor: Dr. Ray Treinen

Employment History

- Assistant Professor of Instruction, Department of Mathematics, Texas State University, August 2024-Present
  - Teach multiple classes per semester
  - Current classes taught range from Developmental Algebra to Calculus II
    - MATH 1300-MATH 2472
- Lecturer, Department of Mathematics, Texas State University, August 2023-May 2024
  - Teach multiple classes per semester
- Graduate Assistant, Baylor University, Fall 2019-Spring 2022
  - Teach one class per semester, as instructor of record, under mentor supervision
  - Tutor in Math Lab as needed
- Lecturer, Texas State University, Fall 2018-Spring 2019
  - Teach four classes per semester, as instructor of record
- Graduate Instructional Assistant, Texas State University, Fall 2016-Spring 2018
  - Teach two classes per semester, under supervision from instructor of record
  - Tutor in Math Lab as needed
- Classes taught range from pre-Algebra to Calculus II; tutoring ranges over all undergraduate math courses

Skills

- Skills acquired:
  - Creating coursework, quizzes, exams, etc.
  - Assessing and grading materials
  - Leadership, teamwork, and instructional skills
  - Application and instruction of materials tailored either to a group setting or to individual; when one-on-one, experience is tailored specifically to individual strengths
- Other skills:
  - Entry level machine learning and basic coding knowledge
    - Known programming languages include C++, Java, and Python
    - Other languages can be quickly learned as needed
  - Tutoring experience in many subjects of math, including:
    - Abstract Algebra, Topology, Algebraic Topology
    - Graph Theory, Statistics/Probability Theory

- Real/Complex/Harmonic Analysis, Functional Analysis, Functions of Bounded Variation
- Ordinary/Partial Differential Equations
- All other courses taught above

Publications:

- Ickes H. Characterizing smoothness of solutions with respect to boundary data of dirichlet-nonlocal-dirichlet boundary value problems for third order ordinary differential equations. [Order No. 29169902]. Baylor University; 2022.
- Herden, Daniel, et al. "Counting the parts divisible by k in all the partitions of n whose parts have multiplicity less than k." *arXiv preprint arXiv:2010.02788* (2020). https://doi.org/10.48550/arXiv.2010.02788
- Ickes, H., Treinen, R. The existence of an energy minimizing configuration for multiple solid objects floating in a bath of three liquids. *Annali di Matematica* **199**, 821–831 (2020). https://doi.org/10.1007/s10231-019-00902-4