Taylor Murray **Curriculum Vitae**

Contact Information

Email: tmurray11@huskers.unl.edu

Education

University of Utah, Salt Lake City, Utah, USA
BS, May 2020.

University of Nebraska-Lincoln, Lincoln, Nebraska, USA
MS, August 2023.

University of Nebraska-Lincoln, Lincoln, Nebraska, USA
Ph. D., 2021-now. Advisor: Jack Jeffries.

Service and Orginization

- Co-organizer: CARS, Commutative Algebra Reading Seminar, University of Nebraska-Lincoln, 2023.
- Co-organizer: URiCA, Upocoming Researchers in Commutative Algebra 2022-present.

Honors and Awards

- Dean's List, University of Utah, Salt Lake City, Utah, 2019-2020.
- Outstanding Qualifying Exam, University of Nebraska-Lincoln, 2022.
- Graduate Research Assistant, University of Nebraska-Lincoln, Summer 2023.
- Commutative Algebra at Nebraska RTG Traineeship, University of Nebraska-Lincoln, Fall 2024.

Seminar Talks

- *An Introduction to DG Algebras and DG Modules*, CARS, Commutative Algebra Reading Seminar, University of Nebraska-Lincoln, 2021.
- *What is Local Cohomology?*, CARS, Commutative Algebra Reading Seminar, University of Nebraska-Lincoln, 2022.
- *What is Local Cohomology?*, CARES, Commutative Algebra Regional Expository Seminar, Zoom, 2022.
- *Differential Operators and Local Cohomology*, CARS, Commutative Algebra Reading Seminar, University of Nebraska-Lincoln, 2023.
- *Graded Local Cohomology and *Bass Numbers*, CAS, Commutative Algebra Seminar, University of Nebraska-Lincoln, 2023.
- *Injective Dimension of Big Modules*, CARS, Commutative Algebra Reading Seminar, University of Nebraska-Lincoln, 2023.

Invited Talks

- *Graded Local Cohomology and *Bass Numbers*, Algebra Days Conference, Arizona State University in Tempe, November 2023.
- *Graded Local Cohomology and *Bass Numbers*, KMGSC, Kansas Mathematics Graduate Student Conference, Kansas University, December 2023.
- *Graded Local Cohomology and Graded Bass Numbers*, Commutative Algebra Seminar, Purdue University, April 2024.
- *Graded Local Cohomology and Graded Bass Numbers*, URiCA, Upcoming Researchers in Commutative Algebra, University of Nebraska-Lincoln, May 2024.
- *Graded Local Cohomology and Graded Bass Numbers*, CIMAT, May 2024.

Teaching Experience

Math Center Tutor **August 2018 - August 2021**

- University of Utah in Salt Lake City, Utah.
- Tutored students in a diverse number of topics, including but not limited to: Calculus 1-3, differential equation, linear algebra, discrete mathematics, number theory, and real analysis.
- During predesignated times of the week, I exclusively tutored for undergraduate real analysis courses.

Math Center Grader **August 2018 - August 2021**

- University of Utah in Salt Lake City, Utah.
- Supplied aid to professors by grading homework or exams.
- Graded homework in the following subjects: quantitative reasoning, college algebra, trigonometry, calculus 2, differential equations, and real analysis.

University of Nebraska-Lincoln

- MATH 106 Calculus 1, Fall 2021.
  Role: Recitation Leader.
  Description: Students learn about limits, differentiation, continuity, applications of derivatives, and the basics of integrals.
- MATH 106 Calculus 1, Fall 2021.
  Role: Recitation Leader.
  Description: Students learn about limits, differentiation, continuity, applications of derivatives, and the basics of integrals.
- MATH 106 Calculus 1, Spring 2022.
  Role: Recitation Leader.
  Description: Students learn about limits, differentiation, continuity, applications of derivatives, and the basics of integrals.
- MATH 106 Calculus 1, Spring 2022.
  Role: Recitation Leader.
  Description: Students learn about limits, differentiation, continuity, applications of derivatives, and the basics of integrals.

- MATH 106 Calculus 1, Summer 2022.

  Role: Recitation Leader.

  Description: Students learn about limits, differentiation, continuity, applications of derivatives, and the basics of integrals.

- MATH 203 Contemporary Mathematics, Fall 2022.

  Role: Instructor of Record

  Description: Students attain basic understanding and familiarity of statistical methods, voting theory, disease modeling, and graph theory.

- MATH 101 College Algebra, Spring 2023.

  Role: Instructor of Record.

  Description: Students learn about basic operations of functions. They also gain an understanding of linear, exponential, logarithmic, polynomial, and rational functions as well as how to apply their understanding to real-world examples.

- MATH 101C Corequisite College Algebra, Fall 2023.

  Role: Instructor of Record.

  Description: Students learn about basic operations of functions. They also gain an understanding of linear, exponential, logarithmic, polynomial, and rational functions as well as how to apply their understanding to real-world examples. In addition, interspersed throughout the course are relevant background topics to aid in student understanding.

- MATH 314 Linear Algebra, Spring 2024.

  Role: Instructor of Record.

  Description: Students learn about systems of equations, Gaussian elimination, determinants, characterizations of invertible matrices, vector spaces over the real numbers, dimension of vector spaces, linear transformations, change of basis, eigenvalues, and eigenvectors.

- MATH 314 Linear Algebra, Summer 2024.

  Role: Instructor of Record.

  Description: Students learn about systems of equations, Gaussian elimination, determinants, characterizations of invertible matrices, vector spaces over the real numbers, dimension of vector spaces, linear transformations, change of basis, eigenvalues, and eigenvectors.