MATH 3305: History of Mathematics

Sul Ross State University
Fall 2026

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Course Description MTH 3305 covers early number systems and symbols, mathematics in early civilizations, and biographies of a representative sample of mathematicians along with an exploration of the chronological development of important ideas in mathematics.

Mathematics Program Outcomes (1) The student will be able to demonstrate content knowledge of basic mathematical principles. (2) The student will be proficient in logic, able to negate statements, provide counterexamples to false statements, and determine the validity of arguments. (3) The student will be able to communicate mathematical content clearly and with valid reasoning.

Marketable Skills (1) Logical and analytical skills. (2) Problem-solving using analytic and algebraic methods. (3) Use of technology in problem-solving and presentation. (4) Communication and pedagogical skills.

Class Meetings Online Anytime (Asynchronous)

Required Text Burton, The History of Mathematics: An Introduction, Seventh Edition, ISBN 0073383155

Course Policies

Communication

I will post course documents, reminders, announcements, and assignments on Blackboard. You will also submit homework on Blackboard. I may also occasionally send announcements via e-mail. You should make sure you know how to access and use these tools. You are welcome to email, telephone, or text me. However, if you choose to contact me, please state your name at the beginning of any message. I am here to help you!

Grading Policy

Your grades will be weighted as follows:

Discussion / Participation	20%
Quiz	20%
Exercise	30%
Research Paper	30%

A student who averages at least 90% will receive an A; at least 80% will receive at least a B; at least 70% will receive at least a C; at least 60% will receive at least a D.

Discussion/ Participation

This course is fully asynchronous, so participation will be based on your engagement with course materials and online activities rather than physical attendance. To receive full credit, you should regularly watch recorded lectures, review uploaded materials, complete quizzes and assignments on time, and actively participate in discussion posts and class activities. There will be online quizzes and discussion activities throughout the semester, so please stay engaged and avoid missing deadlines.

Quiz

There will be online quizzes throughout the semester, and you should expect at least 8 Quizzes. Quizzes will be posted after selected topics are completed, so it is important to stay current with the recorded lectures, notes, and course materials. You will receive automatic feedback after each quiz for both correct and incorrect responses to help strengthen your understanding of the material.

Exercise

For each section, you will be asked to complete an assignment. Assignments will be made available on Blackboard. Homework can be submitted in a variety of formats, but each assignment must be submitted as a single file that I can view and grade on Blackboard. One possibility would be to type up your homework using the Equation Editor on Microsoft Word and save it as a PDF. Another would be to capture high-quality images of your homework using a phone or other device and combine them into a single file, e.g. by pasting each image into a word processor file. Feedback will be provided in the form of comments to your Blackboard file. All work must be shown for full credit. Try to be as tidy as possible so that I can understand your work. Please try to upload pdf files, so that I can view your submission on Blackboard. Submissions consisting of multiple image files will not be graded as it's too easy for me to lose my place and miss something. If I have trouble seeing your file, I will let you know and give you a chance to resubmit.

Research Paper

You will write a 2000-word research paper about a mathematics history topic of your choice. The topic may be the development of a mathematical idea or a biography of a famous mathematician. Plan to have your topic selected by the beginning of October. Additional details will be provided later in the semester.

Subject Outline and Schedule

Below is a tentative subject outline and schedule for this course.

I. Early Number Systems and Symbols (August 24 – September 6)
II. Mathematics in Early Civilizations (September 7 – 13)
III. The Beginnings of Greek Mathematics (September 14 – 20)
IV. The Alexandrian School: Euclid (September 21 – 27)
V. The Twilight of Greek Mathematics: Diophantus (September 28 – October 4)
VI. The First Awakening: Fibonacci (October 5 - 11)
VII. The Renaissance of Mathematics: Cardano and Tartaglia (October 12 – 18)
VIII. The Mechanical World: Descartes and Newton (October 19 – 25)
IX. The Development of Probability Theory: Pascal, Bernoulli, & Laplace (October 26 – November 8)
X. The Revival of Number Theory: Fermat, Euler, and Gauss (November 9 – 15)
XI. Nineteenth-Century Contributions: Lobachevsky to Hilbert (November 16 – 22)
XII. Transition to the Twentieth Century: Cantor and Kronecker (November 23 – 29)

QEP Mapped Course

Course Design: Communication Infused

To be successful in college and beyond, many sources (e.g., Morrealle & Pearson, 2008) indicate that communication competencies are essential. Sul Ross recognizes that the current generation of undergraduate university students should receive training to navigate a global world as competent communicators in various contexts and channels of communication.

Through our Quality Enhancement Plan (QEP) called Compass, Sul Ross aims to equip you to navigate excellence in the 21st century by developing your communication skills across multiple courses. This mathematics course is designed to enhance your communication skills. Therefore, this course has the following QEP Student Learning Outcome:

QEP Student Learning Outcome

The student will create works that exhibit skill in prepared and purposeful communication (written, oral, or visual).

University Statements

Distance Education Statement: *Students enrolled in distance education courses have equal access to the university's academic support services, such as library resources, online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website. Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires secure login. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website. Directions for filing a student complaint are located in the student handbook.*

SRSU Disabilities Services: *Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. RGC students seeking accessibility services should contact Paulette Harris, Executive Assistant to the Vice President and Dean, at 830-279-3023 or email pharris@sulross.edu. Ms. Harris's office is at 2623 Garner Field Road, Uvalde, TX 78801 (this is the mailing address, too).*

University Libraries: *The Sul Ross Library offers FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, library.sulross.edu. SRSU RGC students may request InterLibrary Loans (ILLs) and book check outs from the Sul Ross Library to be picked up at the SWTJC library that is most convenient. Access requires your LoboID and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or phone (432-837-8123). The Southwest Texas Junior College (SWTJC) Library is also available on each campus for your physical use of the space or checking out books. Del Rio, Eagle Pass, and Uvalde students may use online resources available through SWTJC website, library.swtjc.edu These libraries serve as pickup locations for your ILL or Document Delivery or book requests; to do so, choose the appropriate pick-up location when requesting materials from the Alpine campus.*