Math 3305 Syllabus
The History of Mathematics
Fall 2025 Sul Ross State University

Secs. **001**, **V01**	Tue, Thu: 2-3:15p in ACR 206
Instructor:	Dr. Kris Jorgenson
Office:	ACR 109D
E-mail:	kjorgenson@sulross.edu
Office Hours:	Mon, Tue, Wed: 10-11a; Thu, Fri: 10a-12p;
	Wed, Thu, Fri: 3:30-4:30p; also by appointment

Course Description: The prerequisite is Math 2413 (Calculus I). We will study biographies of a representative sample of mathematicians along with an exploration of the chronological development of important ideas in mathematics, particularly in the fields of geometry, calculus, and number theory.

Student Learning Objectives Successful students will demonstrate correct understanding and knowledge of the topics of math history including but not limited to those listed in the previous paragraph while expressing themselves in complete sentences. Students will at times extend and apply concepts and problem-solving methods to new contexts and problem-solving situations.

This course is supportive of the
Student Learning Outcomes for the Bachelor of Science degree in Mathematics:

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.

Required Materials: Textbook: The History of Mathematics: An Introduction 7th edition by David M. Burton, McGraw Hill ISBN: 978-0-07-338315-6
We will cover most of the sections of Chaps. 1, 2, 3, 4, 6, 8, 10, 11 **Conveniently there is a pdf version of this text posted under Course Documents on Blackboard**.
Scientific Calculator: There will be some need of a scientific calculator, which has buttons with denotations such as y^x, a^b, ^, e^x, LN, LOG, but use of a calculator will not be a large part of this course. A calculator may be used to check arithmetical calculations throughout the semester. Graphing calculators contain a scientific calculator, but a graphing utility will not be needed in this course. Symbolic Computer Algebra System calculators will not be allowed.
Class Materials: Students are expected to be prepared in every class with pencils and paper to take notes of lecture content and examples, and you are required to be involved in in-class assignments and discussion. This will be part of your grade.
Blackboard: Also you are required to have access to Blackboard and have an e-mail

address that you check regularly be your e-address registered in Bb since I may need to contact you outside of class with important information.

Grading and Assignments: The assignments discussed below will help students achieve all of the Learning Objectives mentioned previously through active learning and assessment. Your total grade will break down as follows:

The **Daily Grade** (**30**%) will be based on a reading grade and a math homework grade. Beginning the first class of the semester, students will be given a reading assignment due by the next class consisting of pages to read from the Burton text and questions to answer from the reading. Students should be prepared to answer the reading questions by the next class (or whenever the reading assignment is due). There will also be Mathematics homework assigned when the reading questions are assigned. These will mostly be from the textbook. These **Math Homework Assignments** and **Reading Questions** will be the basis of the **Daily Grade** (**30**%) and also will be the basis for **4 Unit Tests** (**worth 50**% **total**).

Test Dates:

Test 1: **Thu**. **Sept**. **18**

Test 2: **Thu**. **Oct**. **9**

Test 3: **Thu**. **Oct**. **30**

Test 4: **Tue**. **Nov**. **25** (**Take-home test handed out—due Tue**. **Dec**. **2**)

In lieu of a final exam, there will be a **Final Project** (**20**%), which will be a paper (approximately the equivalent in length to 10 double-spaced typewritten pages in 12 pt. font) on some math history topic of interest, which also must consist of a certain amount of mathematical content. I suggest a topic idea from Burton (whether or not it is from a section we cover this semester). You must present to me in writing your project idea and receive approval from me on your topic no later than **Friday**, **October 24**. The Project Idea (which includes making this deadline) will count as 20% of your final project grade. For this paper, you must cite your references and indicate with proper reference any direct quote from a source you include. You must have at least 2 reputable sources, which may include the Burton text. You must present to me a copy of an outline for your final project that includes your references no later than **Friday**, **Nov**. **14**. The Project Outline, which includes making this deadline will count 20% of your final project grade. Your final project will be due for presentation on the final exam date, **Monday Dec**. **8th**, **12**:**30**-**2**:**30 pm**. Not reading your project to the class on the 8th will mean a 20% deduction to your final project grade. Your Final Project Attendance Grade (10% of your final project grade) will be based on the percentage of other students' project presentations for which you are present.

I give letter grades according to the traditional 90%-100% for an A; 80-89% for a B; 70-79% for a C; 60-69% for a D; and less than 60% for an F; with some exceptions. Students whose total average is between 50-59% with Test Average over 50% will often be rounded up to a D if the student has completed every major assignment (no exceptions) while doing their best work. Students working similarly with a borderline grade of 89%, 79%, or 69% will often be rounded up to the next grade-level as long as their test average is in line with this total average.

To Guarantee Full Credit for Work Done at a Time Different Than the Scheduled Time:

* For Tests or In-class Quizzes, be sure to contact me about the missed grade **before or by the day of the absence** and be able to produce documentation for a medical excuse or from a faculty sponsor for an absence due to a trip with a Sul Ross student organization. You can send me these documents by e-mail or in-person. Be sure to make an appointment with me to make up the quiz or test in my office area no more than 2-3 days before or after the absence.

* For Reading Assignments, Math Homework, Work is due by 5 pm of the due date. I can be flexible on this if it means getting your questions answered by me, so that you can complete your work with quality. Consequently there is a grace period for late work, but there is a limit to this after which students will receive only half credit. So if you need to hand in late work, be sure to continue working on these assignments to completion, but make sure I know; talk to me about this so I can help you to complete your work and get full credit.

Attendance I will be taking attendance as university policy precludes you from missing 3 weeks or more for anything other than authorized university activities. To excuse an absence for a university activity, in addition to letting me know of the absence by the day of the absence (as explained previously) you must also spend at least 60 minutes outside of class on this course with me or with a tutor, but they will need to sign a note that documents this made-up time. Also I will allow you to excuse a test day for a documented medical absence as long as you also make up the test with me or in the testing center. If you have 3 weeks or more of unexcused absences, I reserve the right to drop you from this class with a grade of 'F', which is university policy.

Good Advice Concentrate on learning the material of the course rather than worrying about your grade. Your time is best spent concentrating on the material to be learned in the impending assignments, asking questions, and devoting yourself to activities that will help you learn the material and do better in the course. I will worry about the details of your grade since you doing so does not help you earn a higher grade. But learning the material and doing well on the tests *will* help your grade. **Remember that math is not a spectator sport**, so the more problems you work yourself, and the more practice you get, the more confident you will be, and you will do better in this course. Working on the problems helps you to figure out what your specific questions are. Remember an individual homework or quiz grade may not count for a lot in your overall grade, but working and learning from the homework and quizzes is **essential** because this is where you learn the topics that will appear on the tests, which do count for a lot of your grade. The best lessons learned often come from correcting a quiz or homework problem in which you have made a mistake.

More Good Advice

Keep absences to a minimum. You never know when you might miss something important either from the lecture or class discussion such as questions other students ask. Remember: YOU ARE RESPONSIBLE FOR EVERYTHING THAT IS DISCUSSED DURING CLASS WHETHER YOU ARE PRESENT OR NOT.

Also do not allow yourself to develop bad habits such as missing classes. It's human nature to be controlled by our habits, so once you develop a weekly habit for the semester, it can be hard to break this habit. So be sure that you allow the necessary time for this

course FROM THE BEGINNING OF THE TERM, ESPECIALLY if you consider mathematics to not be your best subject. If you have trouble in math, then you should attend EVERY class of a college mathematics course. Not showing up to class or not doing the required work will not cause this class to magically go away. If you are not understanding the material and/or have fallen behind in your work, missing class will not help. IF YOU FALL BEHIND, PLEASE DO NOT DROP THIS COURSE WITHOUT TALKING TO ME FIRST. Making mistakes or falling behind is natural, so it is best to talk to me about this. If you do have to miss class, let me know beforehand. Discuss with me what you are not understanding. It is essential to get your questions answered. But meeting with me outside of class is not a substitute for attending class.

Ask questions no matter how easy or trivial they may seem. There is no such thing as a bad or silly question. Questions result when you are interested and have been thinking about areas, such as mathematics, in which you have some limitations in your educational background. Being in a college mathematics course means you will have questions both obvious and more subtle. Asking questions is a very important part of learning.

Study and work problems regularly–every day or every other day. Work on assignments discussed in class as soon as you can after class while the methods discussed are still fresh in mind. You can't expect to succeed in a math course by waiting till the last minute to only study and cram prior to a test. If you promise yourself you will study for a ½-hour, get into the work, forget the clock, then the next thing you know, you've studied and worked for one to two hours. Remember that

LEARNING FROM MISTAKES + PERSISTENCE = SUCCESS!

Classroom Conduct It is important to conduct yourself in a college classroom so that everyone can benefit from good communication between instructor and students. My goal is to create an environment in which everyone can do their best work, learn, and make the best grades possible.

I think you will find that I am a very friendly, sympathetic, and generous instructor as long as you are sincerely working to succeed in this course and certain guidelines for classroom behavior are followed to allow a sanctity of study for your fellow students. Habits such as holding conversations during class, or being engaged in activities not related to this course such as working on a different course or reading your cell-phone will work against the goals of this course and cause you to be counted absent and you will lose Daily Grade credit. Also engaging with electronic communication devices of any kind during class or coming into class more than 5 minutes late or leaving early before class is dismissed circumvent the goals of this course and cause you to lose credit. My sympathy and generosity will quickly evaporate if I find that you are working against the goals of the course or that you are simply trying to get a good grade without learning or without honestly doing the required work. I want you to have every opportunity to learn and succeed in this course.

Please be aware of the rules for Academic Honesty that you will find in the Sul Ross Student Handbook. Use commonsense to think of anything else that will allow you to learn and do the best work that you can in this class, and for me to better help you do your best work. Remember that being registered for this course does not allow you to behave in any manner you wish during class. You must keep other people in mind. It is within university policy for me to send a student out of this class on a temporary or permanent basis if disruptions or interruptions like the types listed above persist.

Libraries

The Bryan Wildenthal Memorial Library and Archives of the Big Bend in Alpine 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/. Off-campus access requires logging in with your LoboID and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or by phone (432-837-8123).

No matter where you are based, public libraries and many academic and special libraries welcome the general public into their spaces for study. SRSU TexShare Cardholders can access additional services and resources at various libraries across Texas. Learn more about the TexShare program by visiting library.sulross.edu/find-and-borrow/texshare/ or ask a librarian by emailing srsulibrary@sulross.edu.

Mike Fernandez, SRSU Librarian, is based in Eagle Pass (Building D-129) to offer specialized library services to students, faculty, and staff. Utilize free services such as InterLibrary Loan (ILL), ScanIt, and Direct Mail to get materials delivered to you at home or via email.

ADA Statement

SRSU Accessibility Services. Sul Ross State University (SRSU) is committed to equal access in compliance with the 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. Students seeking accessibility/accommodations services must contact Mrs. Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Director or Ronnie Harris, LPC, Counselor, at 432-837-8203 or email mschwartze@sulross.edu or ronnie.harris@sulross.edu. Our office is located on the first floor of Ferguson Hall, room 112, and our mailing address is P.O. Box C122, Sul Ross State University, Alpine. Texas, 79832.

Program Marketable Skills:

Marketable Skill (MS) 1: Students Demonstrate Logical and Analytical Skills.

MS 2: Students Demonstrate Problem-Solving Using Analytic and Algebraic Methods.

MS 3: Students Use Technology in Problem-Solving and Presentation.

MS 4: Students Use Communication and Pedagogical Skills.

Academic Integrity

Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. Students should submit work that is their own and avoid the temptation to engage in behaviors that violate academic integrity, such as turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden. Students should also avoid using open AI sources unless permission is expressly given for an assignment or course. Violations of academic integrity can result in failing assignments, failing a class, and/or more serious university consequences. These behaviors also erode the value of college degrees and higher education overall.

Student Responsibilities Statement

All full-time and part-time students are responsible for familiarizing themselves with the Student Handbook and the Undergraduate & Graduate Catalog and for abiding by the University rules and regulations. Additionally, students are responsible for checking their Sul Ross email as an official form of communication from the university. Every student is expected to obey all federal, state and local laws and is expected to familiarize him/herself with the requirements of such laws.

SRSU 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 a 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.

Counseling

Sul Ross has partnered with TimelyCare where all SR students will have access to nine free counseling sessions. You can learn more about this 24/7/365 support by visiting Timelycare/SRSU. The SR Counseling and Accessibility Services office will continue to offer in-person counseling in Ferguson Hall room 112 (Alpine campus), and telehealth Zoom sessions for remote students and RGC students.

Classroom Climate of Respect

Importantly, this class will foster free expression, critical investigation, and the open discussion of ideas. This means that all of us must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, we must all learn how to probe, oppose and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Still we will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.

Supportive Statement

I aim to create a learning environment for my students that supports various perspectives and experiences. I understand that the recent pandemic, economic disparity, and health concerns, or even unexpected life events may impact the conditions necessary for you to succeed. My commitment is to be there for you and help you meet the learning objectives of this course. I do this to demonstrate my commitment to you and to the mission of Sul Ross State University to create a supportive environment and care for the whole student as part of the Sul Ross Familia. If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you.

Important Dates (**16-week term**)

Mon, Aug. 25	First day of classes, first day of late registration
	and schedule changes
Thu, Aug. 28	Last day for late registration and schedule changes
Mon, Sep. 1	Labor Day Holiday, No Classes
Wed, Sep. 10	12th Class Day: Last Day to Drop a Class Without
	Creating an Academic Record for 16- week Courses
Fri, Sep. 26	University as a Community Meal on the Mall
Mon, Oct. 20	Freshman Mid-Term Grades are Due
Fri, Nov. 7	Last day to drop a class with a grade of "W" for 16-week term
	by 4 pm in University Registrar's Office
Wed-Fri, Nov. 26-28	Thanksgiving Holidays, No Classes
Wed, Dec. 3	Last Day of Class before Finals
Thu, Dec. 4	Dead Day, No Classes
Fri, Mon-Wed: Dec. 5, 8-10	Final Exams, End of Term

Math 3305 (Math History) Class Outline Fall 2025

Chap., Section refer to **The History of Mathematics An Introduction**, 7th Ed. by David M. Burton

Class meeting times: Tue, Thu 2-3:15 p **X = no class**

Tue.	**Thu.**	**Readings Due** Sec.: Pgs. (Topics)
Aug. 26	Aug. 28	Chs. 1, 2: Introduction: Babylonian, Egyptian, Greek mathematics
Sep. 2		Chs. 1, 2: Introduction: Babylonian, Egyptian, Greek mathematics
	Sep. 4	3.1-3.2: p. 83-102 (Thales, Pythagoras, Figurative Numbers)
Sep. 9		3.3: p. 105-117 (Pythagorean Problem, Incommensurable Quantities)
	Sep. 11	3.4: p. 120-127 (Three Construction Problems)
		3.5: p. 134-137 (The Grove of Academia: Plato's Academy)
Sep. 16		Test 1 Review
	Sep. 18	**Test 1: Assigned up through Sec. 3.5**
Sep. 23		4.1, 4.2: p. 141-159 (Euclid, Euclidean Geometry)
		p. 164-168 (Construction Regular Pentagon)
	Sep. 25	4.3: p. 170-181 (Euclid's Number Theory)
Sep. 30		4.5: 193-208 (Archimedes, Apollonius of Perga)
		6.1, 6.2: 269-285 (Arabic Mathematics, Fibonacci)
	Oct. 2	6.3: 287-292 (Fibonacci sequence)
		6.4: 293-298 (Fibonacci and the Pythagorean Problem)
Oct. 7		Test 2 Review
	Oct. 9	**Test 2: Assigned of Secs. 4.1-6.4**
Oct. 14		8.1: p. 337-360 (Galileo and the Renaissance)
	Oct. 16	8.2: p. 362-380 (Rene Descartes)
Oct. 21		8.3: p. 381-408 (Isaac Newton)
	Oct. 23	8.4: p. 409-424 (Gottfried Leibniz)
		p. 430-432 (Maria Agnesi, Emilie du Chatelet)
		Approved Final Project Topic due in writing Fri. Oct. 24
Oct. 28		Test 3 Review
	Oct. 30	**Test 3: Assigned of Chap. 8**
Nov. 4		10.1: 497-510 (Mersenne primes, perfect numbers)
	Nov. 6	10.2: 511-527 (Fermat, 18th Century)
Nov. 11		10.2: 527-537 (Euler)
		10.3: 539-551 (Gauss and the 19th Century)
	Nov. 13	10.3: 551-560 (Integer Congruence)
		Final Project Outline due in writing Fri. Nov. 14
Nov. 18		11.1: 563-581 (Parallel Postulate, Legendre)
	Nov. 20	11.2: 584-604 (Non-Euclidean Geometry)
Nov. 25		11.3: 604-624 (The Age of Rigor) **Test 4 handed out**
	Nov. 27	**X--Thanksgiving Holiday**
Dec. 2		**Test 4 (take-home) due over assigned from Chaps. 10, 11**
		Final Projects Final Exam Week begins Fri Dec. 5
Dec. 8-10		Final Exam Week continues
Mon Dec. 8, 12:30-2:30 pm		**Final Projects due in writing and read**