



Course Syllabus

Name of Course

Course Name: Mathematical Thinking

Course Code: MGF 1130

Course CRN: 51827

Semester: Summer 2026

Credit Hours: 3 hours

Pre-requisites: Successful completion of development courses, appropriate placement test scores, or meet State exemption requirement.

Contact Information

Instructor

Name: Abdallah Alkadah

Email: aalkadah1@gulfcoast.edu

Office hours: 30 minutes after class

Instructor Credentials

B.S. in computer science, 1984

M.S. in mathematics, 1986

Division Chair

Name: Angelia Reynolds

Title: Mathematics Division Chair

Email: areynolds@gulfcoast.edu

Phone Number: 850-872-3852

Division Administrative Assistant

Name: Scott Spencer

Title: Mathematics Div. Admin. Asst.

Email: sspencer@gulfcoast.edu
Phone Number: 850-747-3229

Course Information

Catalog Description:

Through this course, students will utilize multiple means of problem-solving through student-centered mathematical exploration. The course is designed to teach students to think more effectively and vastly increase their problem-solving ability through practical application and divergent thinking. This course is appropriate for students in a wide range of disciplines/programs.

Topics included are logic, set theory, geometry, and personal finance.

The course must be passed with a minimum grade of “C” in order to satisfy general education requirements in mathematics. Calculators are allowed in the course.

Student Learning Outcomes:

1. Students will determine efficient means of solving a problem through investigation of multiple mathematical models.
2. Students will apply logic in contextual situations to formulate and determine the validity of logical statements using a variety of methods.
3. Students will apply mathematical concepts visually and contextually to represent, interpret, and reason about geometric figures.
4. Students will recognize the characteristics of numbers and utilize numbers along with their operations appropriately in context.
5. Students will analyze and interpret representations of data to draw reasonable conclusions.

Required Course Materials & Resources:

1. MyLab Math with Pearson eText for Thinking Mathematically, 8/e, by Blitzer ISBN-13: 9780137551354 or ISBN-13: 9780137551361 or ISBN-13: 9780137551224
2. A handheld calculator: While calculators with fewer features are acceptable, the GCSC Mathematics Division recommends the TI-83 or TI-84 calculator. Each student is expected to have his/her own calculator. Cell phones and computers **may not** be used as a calculator.
3. Learning Management System Usage: Canvas will be used as both the access point for all MyLab Math assignments and as a repository of information. Assignment deadlines will all be available in Canvas, as will course videos and any additional resources the instructor finds beneficial. The Canvas gradebook will be set up to calculate current averages. Course evaluations will also be administered via Canvas.

Delivery Method:

This course meets face-to-face. Course material, assignments, and announcements may be offered via Canvas as a supplemental approach to learning at the discretion of the instructor. Please make sure that

you have access to a computer with a webcam and internet service, in the event that a change in course delivery is needed.

Student Expectations

In this course, communication and feedback will occur through various channels, including GCSC email, Canvas Inbox, Canvas Announcements, Canvas Discussions, Microsoft Teams or Zoom, assignment feedback, and instructor office hours. Review the statements below so that you understand the expectations for communication.

As a student at Gulf Coast State College, you are expected to:

- obtain all required course materials
- access and complete assignments in MyLab Math through Canvas
- attend class regularly and keep up with the course material
- do your own work (see Academic Integrity and Use of AI)
- communicate promptly with the instructor if you are having trouble with the material or are unable to complete an assignment on time
- read course announcements posted in Canvas

As your instructor, my commitment to you is to:

- **Provide Timely Feedback:** I will review and provide feedback on your assignments and submissions promptly. My goal is to help you understand your strengths and areas for improvement, which is crucial for your academic growth.
- **Respond Via Canvas Inbox:** I will respond to your emails or messages within 24-48 hours (excluding weekends), unless otherwise noted. I understand the importance of clear and timely communication in addressing your questions and concerns.
- **Maintain Weekly Office Hours:** I will maintain regular weekly office hours, but I can also be available by appointment. This is to ensure I'm available for any questions or concerns that may come up during the week.

Course Schedule

The course is split into four units, each of which contains material from 6 to 8 sections. There will be a proctored test for each of the four units. Each section will include graded homework and a graded quiz. All assignments, along with their due dates, are listed in Canvas under "Assignments".

Unit 1: Set Theory

- Section 1.1: Inductive and Deductive Reasoning
- Section 2.1: Basic Set Concepts
- Section 2.2: Subsets
- Section 2.3: Venn Diagrams and Set Operations
- Section 2.4: Set Operations and Venn Diagrams with Three Sets
- Section 2.5: Survey Problems

Unit 2: Logic

- Section 3.1: Statements, Negations, and Quantified Statements
- Section 3.2: Compound Statements and Connectives
- Section 3.3: Truth Tables for Negation, Conjunction, and Disjunction
- Section 3.4: Truth Tables for the Conditional and the Biconditional

Section 3.5: Equivalent Statements and Variations of Conditional Statements

Section 3.6: Negations of Conditional Statements and De Morgan's Laws

Section 3.7: Arguments and Truth Tables

Section 3.8: Arguments and Euler Diagrams

Unit 3: Personal Finance

Section 6.1: Algebraic Expressions and Formulas

Section 6.2: Linear Equations in One Variable and Proportions

Section 8.1: Percent, Sales Tax, and Discounts

Section 8.2: Income Tax

Section 8.3: Simple Interest

Section 8.4: Compound Interest

Unit 4: Geometry

Section 9.1: Measuring Length and the Metric System

Section 10.1: Points, Lines, Planes, and Angles

Section 10.2: Triangles

Section 10.3: Polygons and Perimeter

Section 10.4: Area and Circumference

Section 10.5: Volume and Surface Area

Grading

GCSC Grading Scale

The College Catalog will be used to convert the numerical average to a letter grade. The college grading scale is A (100-90), B (89-80), C (79-70), D (69-60), and F (59-0).

Calculation of Grades

The average of the four proctored unit tests will count as 75% of the course grade. Additionally, the average from the assigned homework will count 15%, and the average from the assigned section quizzes will count 10%.

Incomplete Grades

Grades of Incomplete in any course can only be assigned to students who have an emergency arise during the last two weeks of the course. To receive an Incomplete, students must:

- Submit a written request to the instructor prior to the last face-to-face class meeting. For online courses, a written Incomplete request must be received no later than the week before the Final Exam period begins.
- Have completed no less than 60 percent of the course requirements and be passing the course at the time the request for an Incomplete is submitted.

Important Note: The Incomplete option provides 30 days from the date grades are due to make up any missing work; if work is not submitted during this period, the grade will automatically change to an "F" in Lighthouse.

Course Policies

Accessibility Statement

Gulf Coast State College supports an inclusive learning environment for all students. If there are aspects of the instruction or design of this course that hinder your full participation, reasonable accommodations can be arranged. Prior to receiving accommodations, you must register with Student Accessibility Resources. Appropriate academic accommodations will be determined based on the documented needs of the student. Please visit [GCSC's Student Accessibility Resource \(SAR\) webpage](#) to learn more. For information regarding the registration process, email sar@gulfcoast.edu or call 850-747-3243.

Attendance Policy

Attendance in class is vital to your success and is positively correlated with your final grade. Furthermore, attendance with participation is even more highly correlated with your final grade. Please ensure that you are present and participating in each class session. Your instructor will monitor participation at the beginning of each semester. If you are not completing any graded assignments during this period, you may be withdrawn from the course. You will be financially responsible for the course and a "W or NS" will appear on your transcript. Withdrawal from a course may also have implications for financial aid.

Additionally, absences of more than one-eighth of the course (e.g., four absences in a standard 16-week, two-class-per-week semester) may result in withdrawal. **YOU MUST ATTEND ON EACH TEST OR EXAM DAY.** Students who do not complete a graded exam before the withdrawal deadline may be withdrawn for failure to make adequate progress in the course. Again, withdrawal from a course may have implications for financial aid.

Make-Up Work Policy

Students who miss a test deadline for any reason should contact their instructor as soon as possible. Instructors may allow a student to test late, but this is only at their discretion. Missed tests will be assigned a grade of 0.

Withdrawal Policy

Two withdrawals are permitted per credit course. After that, a grade will be assigned. Please be concerned about withdrawals. When admitting students into certain programs, universities may calculate withdrawals as grades. It is your responsibility to verify the effects of enrollment and/or withdrawal upon your financial assistance (financial aid, scholarships, grants, etc.). There are two kinds of withdrawals---student and administrative.

- *Student Withdrawal (W1)* - Students wishing to withdraw must complete the online Student Withdrawal Form before the scheduled withdrawal deadline as published in the College catalog. Student withdrawals initiated prior to the scheduled withdrawal deadline will be recorded as a grade of "W." The withdrawal deadline for an off-term or condensed term is one week after midterm.

- *Administrative Withdrawal (W2)* – A faculty member may withdraw a student up to the published withdrawal deadline for violation of the class attendance policy, in which case the student will receive a grade of “W.” The withdrawal deadline for an off-term or condensed term is one week after midterm.

Students cannot withdraw from developmental studies courses (college-preparatory classes) after the drop/add period without written permission from their instructor and/or their academic advisor.

Academic Integrity

Honest participation in academic endeavors fosters an environment in which optimal learning can take place and is consistent with the college’s mission. Academic misconduct, including cheating or plagiarism, is destructive to the spirit of an educational environment. GCSC professors report every instance of student academic misconduct to the college for inclusion on the student’s records. Most course syllabi include an academic honesty policy and the consequences for violating this policy. Familiarize yourself with course policies regarding authorized or unauthorized use of AI to avoid the pitfalls of academic dishonesty.

The following definitions will apply:

"Cheating"

includes but is not limited to use of any unauthorized assistance in taking quizzes, tests, or examinations; dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; the acquisition without permission of tests or other academic materials belonging to a member of the College's faculty.

"Plagiarism"

includes, but is not limited to, the use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment as well as the purchase of papers or projects. It can also include overuse of an editing program like Grammarly or submitting work written by an Artificial Intelligence (AI) generator like ChatGPT. Make certain to consult your course syllabi for your instructor's guidelines of AI material.

"Self-plagiarism"

occurs when a student submits the same or considerably similar document to fulfill requirements in different classes. For example, if a student submits a term paper in Religion they originally wrote for an English class, this is self-plagiarism. Once a paper receives a grade in one class, it cannot be submitted again for another class.

"Generative Artificial Intelligence (AI)"

is technology that uses machine learning to create new content, such as text, images or code, based on user input. These systems are trained on vast amounts of data, including large language models and image or code generators. Common examples include ChatGPT, GitHub, Copilot, Google Gemini, Perplexity, and the Grammarly AI function.

Sanctions for incidences of academic misconduct, depending on the severity of the incidence and/or its repetition, may range from receiving an F grade (or 0) for the test, assignment, or activity, to failure of the course, to suspension or dismissal from the college.

Classroom Recording

In accordance with federal and state privacy laws, students may record class lectures for their own personal educational use, in connection with a complaint to the college, or as evidence in internal or external legal proceedings. Students may not publish or upload the recordings or any components thereof without the knowledge and written permission of the faculty member. Failure to obtain permission to publish could lead to the students' having to pay damages, attorney fees, and court costs. For more information about what can be recorded, please see the guidelines in the GCSC Student Handbook.

Generative Artificial Intelligence (AI) Policy

The use of generative AI tools in academic work requires clear guidelines to maintain academic integrity. Please review the policy selected for this course regarding the use of AI tools such as ChatGPT, Copilot, Grammarly's AI features, and similar platforms for assignments, research, and other coursework.

See the student handbook for further information. Students with questions about acceptable use should consult their instructor.

Generative AI Use with Permission and Disclosure

Students may use basic assistive technologies for spelling, grammar, and formatting (e.g., PaperRater or SpellCheckPlus). Generative AI tools (e.g., ChatGPT, Copilot, Grammarly's AI function, etc.) may also be used for classes and/or assignments where instructors have given explicit permission. Students must clearly disclose and properly cite any AI-generated content used in their work, following course guidelines. Students are permitted to use AI only in the manner and means described by the instructor. Unacknowledged or unauthorized AI use will be treated as a violation of academic integrity and may result in penalties, including a zero on the assignment and additional disciplinary actions as outlined in the college's academic integrity policy.

Anti-Discrimination Policy

Gulf Coast State College does not discriminate against any person in its programs, activities, policies or procedures on the basis of race, ethnicity, color, national origin, marital status, religion, age, gender, sex, pregnancy, sexual orientation, gender identity, genetic information, disability, or veteran status. All questions or inquiries regarding compliance with laws relating to non-discrimination and all complaints regarding sexual misconduct or discrimination may be directed to Amanda Reed, Executive Director of Human Resources/Title II/504/Title IX Coordinator and Employment Equity Officer, Gulf Coast State College, 5230 W. US Highway 98, Panama City, FL 32401; 850-769-1551, ext. 3516. Rules, policies, fees, and courses described in this catalog are subject to change without notice.

Syllabus Policy

For any syllabus posted prior to the beginning of the term, the instructor reserves the right to make minor changes prior to or during the term. The instructor will notify students via e-mail or Canvas announcement when changes are made in the requirements and/or grading of the course.

Student Support Resources

Gulf Coast State College is committed to providing you with the resources you need for success as a student and beyond. View all the academic and student support resources provided at GCSC on the [Student Services web page](#).

Course Technology & Support

To successfully participate in this course, students must have basic computer and digital information literacy skills and meet the following technology requirements:

- **Computer:** Up-to-date web browser that supports the Canvas learning management system; please refer to the system requirements for compatibility and information on using the Canvas app on mobile devices.
- **Internet Speed:** Minimum bandwidth of 8 Mbps upload/download speed to effectively engage in online activities and access multimedia.

If you need technical support, contact the ITS Help Desk, available 24/7 at (850) 913-3303.