

# Syllabus for Spring 2024 MATH 1100 Section 14421

<b>Cuyahoga Community College Business, Technology &amp; Mathematics Eastern Campus</b>	
Course: MATH 1100 Mathematical Explorations	Instructor: Mike McCraith
Lecture Hours: 03 hours Laboratory Hours: 00 hours	
Office: EMHC 210 Office Phone: 216-987-2320	Office Hours: MW 8 - 10 am, 11:45 am - 1 pm TTH 8 - 9 am, 10:30 - 11 am, 2:15 - 3 pm
Email: mike.mccraith@tri-c.edu	Website: <a href="http://www.mathaccordingtomike.com">http://www.mathaccordingtomike.com</a>
Text: <u>Mathematical Ideas</u> 14 <sup>th</sup> Ed, Miller, Heeren, Hornsby (please only get the MyMathLab access to save money)	
Section 14421: TTH 9 - 10:25 am 14-week EMHC 111	

## Prerequisites

Math 0955 Beginning Algebra or sufficient score on math placement test; or departmental approval.

## Course Description

Survey of mathematical topics to develop a broader appreciation of mathematics by exploring ways in which the artistic, aesthetic, and intellectual aspects of mathematics are as important as its utility. Students will have the opportunity to study basic concepts and skills of problem solving, set theory, logic and number theory with the purpose of introducing them to the nature of mathematics as it applies to both the practical and the abstract. This course is designed for students whose majors do not require courses in Statistics or STEM and will count towards the requirements for Associate's degrees requiring a 1000-level math.

## Course Schedule

At the beginning of each class, the instructor will answer homework-related questions and a normal lecture will follow. On test days, you'll have the entire class time to take the test. This course has videos on my website (above and also on YouTube). There will be two types of videos: mini lectures and example videos. Watch both types, read the book, attend class, and take notes prior to attempting the homework and quizzes. Once you've completed a section's worth of videos and reading, then try the homework. Once you've completed an entire chapter's worth of homework, take this quiz.

## Learning Outcomes for Math 1100

Upon satisfactory completion of MATH 1100 Mathematical Explorations, the student should be able to perform the following outcomes and supporting objectives:

- Solve problems utilizing various techniques.
- Demonstrate knowledge in the basic concepts of set theory.
- Demonstrate a knowledge of the basic principles and terminology of symbolic logic.
- Convert between various bases.
- Categorize numbers using various topics in number theory.
- Demonstrate and use the principles of transformational, non-Euclidean, and fractal geometries in modeling the universe.

For a more detailed Objective list, please visit <https://forms.tri-c.edu/OfficialCourseOutlines/>

## Attendance

It is your responsibility to attend every class. The more classes you attend, you increase the chance of a better grade. You are also responsible to find out what you missed and your responsibility to contact a classmate for any notes you have missed. Students are expected to arrive on time and stay for the entire class. To be marked as Attended, you will need to submit the homework for Sections 1.1 and 1.2 by Tuesday, February 6, 2024 at 11:59 pm.

## Homework, Quizzes, PowerPoint Package, and Projects

There will be online homework assigned for every section that we cover in class. Homework can be accessed through Blackboard (Pearson Link). You will have one week to complete each homework assignment and have the chance to receive full credit. You should consider printing out the homework to do the problems on paper, log back in, and the submit answers. Each section is worth 3 points.

Quizzes are also posted on the MyMathLab website listed above. Quizzes cover the entire chapter and are worth 10 points. You have only two hours to complete the quiz. You will have two attempts at the quiz and I will take the better grade. Make sure you stay organized as you do your homework and quizzes to ensure full credit is received. The quiz will be available during the same week that the last section of homework for that quiz is available. See the last page of the syllabus for a detailed schedule.

Homework and quizzes will have due dates where a student can receive full credit. Any homework turned in after that due date will receive a penalty of 30% (only the parts answered after the due date.) Quizzes started after the due date lose 30% on the entire assignment. It's advisable to turn in everything by the due date to maximize your points as points in this course are very hard to come by. The late date to turn in all homework and quizzes is Tuesday, May 7, 2024 at 11:59 pm.

All of the planned class examples will be typed and available to you on Blackboard under the button called the PowerPoint Package. You should come to class with these slides and write the answer to the exercise as we work it out together in class. They are worth 5 points per collection. Whichever sections the test covers is what you will need to turn in for your projects and the PowerPoint Package on the day of the test. Do not come late on test day. Any material submitted after the class has begun will not be accepted for credit.

There will be projects based on the material in Sections 4.4 and 5.5. Projects are 15 points each. Due dates are listed on the last page and more information about the projects will be given in class. The projects cannot be turned in late for credit.

## Partial Credit Policy

While grading the tests, partial credit will be given based on the amount of work shown and how correct the work is. For example, a student who gets their answer straight from the calculator without showing any work will receive very few points, if any—even if the answer is correct. Whereas a student who does the correct work but somehow arrives at an incorrect answer will receive the majority of the credit. Arithmetic mistakes warrant only a few points lost; however, conceptual errors will not earn many points of partial credit. I understand that there are times where you don't need to use the calculator to get the answer, and thus in those cases, the policy does not apply. **If at any time, you need to reach for your calculator to get the answer, then you will need to write down the setup on the test paper and the corresponding answer.**

## Assistance

Free online tutoring is available with a link under Student Services in My Tri-C Space through eTutoring and Smarthinking.

## Tests

A test will be given approximately two classes after the final section the test will include is covered in class. A 200-point accumulative Final will be given on the last day of class. Tests may consist of homework-style problems, true/false, and short answer. The test must be done in pencil. A test not done in pencil or one that is done in poor handwriting will not be graded. All steps must be shown on the test or full credit will not be given (in Math, how you get the answer is sometimes more important than the actual answer.) A test will not be given to a student if the student arrives on the day of the test after the first test has been handed in and that student will receive an automatic zero. Be sure to get to the class early on test days. It's recommended that you view the previous tests on my website. On the website, click on "Classes" and then on "Math 1100". Take those tests and use the answer keys to check your work. Other test day rules: You may not use the bathroom during test time. Also, asking for a calculator and/or pencil on test day will result in a 5-point loss per request.

## Grade Replacement Policy

If all homework assignments are turned in on time and a score of 70% or higher is received on all homework assignments, and has not been caught cheating, then the lowest test score is **replaced** by the Final if the Final is higher. Otherwise, all tests and Final scores are kept.

## Make-ups/Late Material

There will be no make-up tests offered. No make-up assignments (About Me, Weekly Planner, Syllabus Quiz, projects and tests) will be accepted for any reason. Be sure to have all materials on the day and by the time that they are required. Homework and quizzes turned in after the due date will be docked 30%. If you know you will not be able to make it to class when an assignment is due, you can send a scanned copy of your work to my email. You may also take a photo with your cell phone and email it to me. Make sure the file size is not large or the email may not be received. The deadline for scanned material remains the same as if you were in class. Requests for extra time are handled on a case-by-case basis, but are rarely granted. Get your assignments done early to avoid any issues.

## Cheating Policy

Cheating will not be tolerated by the instructor. It includes having any extra materials not approved by the instructor. Cheating also includes having these materials in your possession. For instance, if you borrow a calculator, you are obligated to make sure there are no formulas in the calculator.

Misuse of external resources (including, but not limited to, other texts, other student's work, the internet, and the student solution manual, unauthorized aids on a test, using purchased or pre-made term papers, projects, or other work, and plagiarism) by submitting work that is not their own also constitutes cheating. Use of AI also falls in this category (see below). For example, if a student copies from the student solution manual and turns that in as their homework, it is considered cheating. If you do not understand how to get the answer, do not simply copy down the work from an external source. Instead, ask me to help you with the problem. Copying down from an external source does not demonstrate mastery of the material and will not help you on the exam and on the final. Never give me the impression that you are cheating. Never look over at other student's work and never talk during the test for any reason. Throughout the course, your handwriting samples will be used for the purpose of comparison. If there is any suspicion that cheating has occurred, such as someone else did the work, then the Cheating Policy will be enacted.

On the first instance of cheating, the student will be reported to the Dean of Student Affairs, the grade received for that entire assignment/exam will be a zero, and the overall grade will be lowered by one letter. For the second instance of cheating, automatic failure in the course will result and a Student Conduct Hearing will take place. See the Student Handbook for more information.

## The Use of AI

By enrolling in this course, you pledge to always conduct yourself with honor and integrity. You pledge to not lie, cheat, or collaborate when prohibited, and to actively contribute to a community of trust. You are fully responsible for all assignments, instructions and information presented in this course, whether you are present or not. When you turn in an assignment, you are acknowledging that it is your work, and you are responsible for explaining it and your thought process. At any point, you may be asked to meet one-on-one with your professor for a brief discussion of your work: a live conversation in which you answer questions about the material and demonstrate a deep understanding thereof. The grade for an assignment or for the course can be withheld until the meeting occurs.

The use of all AI technologies is prohibited in the course for any assignment. AI technologies include, but are not limited to, ChatGPT, Google Bard, Hugging Chat, etc. All work submitted for grading must be generated by the student. The use of any AI to complete any coursework would be subject to the academic dishonesty procedures as outlined in the Student Handbook. You are fully responsible for knowing and adhering to Cuyahoga Community College policies on academic integrity as described in the Tri-C Student Handbook. Failure to adhere to these guidelines will lead to the Cheating Policy being enforced.

## Cell Phone Policy

Tests are already stressful parts of any math class, but, a disruption, like a cell phone, can make the entire experience worse. Due to this, if any disruption is caused during a test from a cell phone, the student with the cell phone will be required to write a paper. See below for information on the paper. If the paper is not turned in within one week, the student will receive a zero on the test. The paper should focus on disruptions during a test caused from cell phones. You may also briefly discuss other forms of disruptions. End the paper with a summary of what you have learned in this process. The paper is to be three pages in length, double-spaced, with an additional page of references. You must site two references using the MLA format.

If after all of this and the same student allows their cell phone to disrupt another test, the student will be asked to leave the class and will receive a zero on their test. A disruptive cell phone includes one that rings and one that is on vibrate. I completely understand that life occurs outside of the classroom. If it is a test day and you are expecting an important call, simply place the cell phone on your desk and put it on silent. The cell phone will still light up to let you know there's an incoming call or text. If that occurs, turn your test over and quietly leave the room to answer the call. That way, you will minimize the disruption and it should not break the concentration of fellow students. During class, cell phones are considered to be participating in disruptive behavior and will not be tolerated in class. Cell phones may not be used during tests. They also may not be used during class to take photos of the board. They must be turned off or on silent- not vibrate. Anyone using one to text message during any class period will be asked to leave for that day.

## Instructor's Expectations

Math is a difficult subject for most people, so I strongly encourage you to ask any questions you may have (without having to worry.) Follow the guidelines (see below) to start every week prepared. Be sure homework is done in a timely manner and that you adequately schedule your time to include homework and studying. Studying only a "couple hours" for a test is never enough. Be sure to start to study for a test at least 2 days before the test. That way, you leave enough time for the material to be understood and to ask any questions. Do not wait until the last minute to get the help you might need! If you do not ask questions when you have them, then you are shorting yourself of an opportunity to learn the material. I will answer all questions in a respectful, patient, and timely manner.

**When corresponding through email, refrain from using "internet speak". Any such email will be returned.**

## College Calendar

Date	Calendar Description
January 29, 2024	Spring Semester Session O (14 Weeks) Begin
February 12, 2024	Last Day to Withdraw from Session O (14 Weeks) with NO RECORD
March 11 - 17, 2024	Spring Break - College Closed - No Classes Scheduled
April 5, 2024	Deadline to Petition for Graduation
April 19, 2024	Last Day to Withdraw from Session O (14 Weeks) Course with a "W" Grade
May 6-12, 2024	<b>Final Exam Week - Full Term</b>
May 12, 2024	Spring semester Full Term, Session B (Second 8 Weeks), Session M (12 Weeks) and Session O (14 Weeks) End
May 14, 2024	Final Grades Due: Full Term, Session B (Second 8 Weeks), Session M (12 Weeks) and Session O (14 Weeks)
May 17, 2024	Commencement

## Incomplete Grades

The grade "I" is only given if a student meets **both** of the following conditions:

- The student has a **passing status** in the class and has completed at least 70% of the course work, AND
- The student is unable to complete the rest of the required course work due to circumstances *judged by me* to be beyond his/her control.

A notation of "I" indicates that you must complete the course requirements within five (5) weeks of the next semester (summer excluded) or the "I" will be automatically changed to an "F". See Student Handbook for more information.

## Grading

Grades will be based on the following<sup>†</sup>:

About Me * ‡ •	5
Weekly Planner ‡ •	6
Syllabus Quiz * ‡ Ω	6
PowerPoint Package * Ω	15
Homework	48
Homework Quizzes	50
Projects	30
3 Exams	300
Final	200
<b>TOTAL</b>	<b>660 †</b>

Final grades are based on:

Percent	Points	Final Grade
90 - 100	594 - 660	A
80 - 89	528 - 593.99	B
70 - 79	462 - 527.99	C
60 - 69	396 - 461.99	D
0 - 59	Below 396	F

† Total point value subject to change due to time

\* Graded on an all-or-nothing basis

‡ Due on January 31, 2024 at 9:00:00 am

• Found on mathaccordingtomike.com

Ω Found on Blackboard

Grades shown on MyMathLab are not your current grade—they only show the grade for what you completed, which may not be close to your actual grade. If you want to know your current class grade, please email me.

## Extra Information

Office hours! Use them to your advantage. Let no question go unasked. **Be sure to have your questions prepared in advance to maximize efficiency during office hours.** There is not time to redo the lecture during office hours so come prepared to ensure all students are given a chance for help. Email me a photo of a lion cub by the end of the first Wednesday of Week 1 for some extra credit. An important note: **You are not bothering me!** Some students feel that they ask too many questions. I'd rather you ask than not ask.

The syllabus is a fluid document and is subject to change.

As for a hint: be sure not to only write down what I write down on the board, but also what I say in between the steps. This will greatly help you as you study. Also, if you need to audio record the class, feel free to do so. Believe it or not, this could help you fill in the gaps to your notes. Please, no children in the class. **When corresponding through email, refrain from using "internet speak". Any such email will be returned.**

Click here for the [TRI-C Instructional Policies](#)

This includes

- Academic Credit
- Accessibility Statement
- Attendance Tracking
- Religious Accommodations
- Learning Outcomes Assessment
- Concealed Carry Statement

<https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf>

# MATH 1100 Schedule

Days	Sections Covered	Days	Sections Covered
Jan 30 & Feb 1	Introduction 1.1 Solving Problems by Inductive Reasoning <i>Videos 64, 1 - 2</i> 1.2 An Application of Inductive Reasoning: Number Patterns <i>Videos 65, 3 - 4</i>	March 26 & 28	Test 2 Chapter 3 Film: The Story of 1
February 6 & 8	1.3 Strategies for Problem Solving <i>Videos 65, 5 - 9</i> 1.4 Numeracy in Today's World <i>Videos 66, 10 - 12</i> 2.1 Symbols and Terminology <i>Videos 66, 13 - 14</i>	April 2 & 4	4.4 Conversion Between Number Bases <i>Videos 74, 47 - 54</i> 4.4 Project start
February 13 & 15	2.2 Venn Diagrams and Subsets <i>Videos 67, 15 - 17</i> 2.3 Set Operations <i>Videos 67, 18 - 22</i>	April 9 & 11	5.1 Prime and Composite Numbers <i>Videos 75, 55 - 56</i> 4.4 Project due Wednesday, April 11, 2024 at 9 am
February 20 & 22	2.4 Surveys and Cardinal Numbers <i>Videos 68, 23 - 24</i> 3.1 Statements and Quantifiers <i>Videos 68, 25 - 30</i>	April 16 & 18	5.2 Large Prime Numbers <i>Videos 76, 57</i> 5.3 Selected Topics from Number Theory <i>Videos 76, 58</i>
February 27 & 29	Test 1 Chapters 1 and 2 3.2 Truth Tables and Equivalent Statements <i>Videos 69, 31 - 35</i>	April 23 & 25	5.4 Greatest Common Factor and Least Common Multiple <i>Videos 77, 59 - 63</i>
March 5 & 7	3.3 The Conditional and Circuits <i>Videos 70, 36 - 39</i> 3.4 The Conditional and Related Statements <i>Videos 71, 40 - 41</i>	Apr 30 & May 2	5.5 The Fibonacci Sequence and the Golden Ratio <i>Video 78</i> Film: Donald Duck in Mathmagic Land 5.5 Project
March 12 & 14	Spring Break! Celebrate National Pi Day March 14 <sup>th</sup> !	May 7	Review
March 19 & 21	3.5 Analyzing Arguments with Euler Diagrams <i>Videos 72, 42</i> 3.6 Analyzing Arguments with Truth Tables <i>Videos 73, 43 - 46</i>	May 9	FINAL 9 am - 11 pm

## Homework, Quiz, and Projects Due Dates

Step 1: Get a daily planner

Step 2: Write these dates in the planner

Step 3: Become organized

Homework Assignments Availability Dates		Quiz Availability Dates	
Jan 30 - Feb 6	Sections 1.1 - 1.2	Chapter 1	February 6 - 13
February 6 - 13	Sections 1.3 - 1.4, 2.1	Chapter 2	February 20 - 27
February 13 - 20	Sections 2.2 - 2.3	Sections 3.1 - 3.3	March 5 - 12
February 20 - 27	Sections 2.4, 3.1	Sections 3.4 - 3.6	March 19 - 26
Feb 27 - Mar 5	Sections 3.2	Section 4.4, Chapter 5	Apr 30 - May 7
March 5 - 12	Sections 3.3 - 3.4	<p>The first date is when the assignment is available. The second date is when it is due.</p> <p>Homework and quizzes are due at 11:59 pm of the second date listed. After the second date listed, homework and quizzes are penalized 30% (See Homework and Quizzes). The projects cannot be turned in late for credit. No makeups for tests. No exceptions for any reason.</p> <p><b>Last day to submit outstanding homework and quizzes: Tuesday, May 7, 2024 at 11:59 pm at 11:59 PM.</b></p>	
March 19 - 26	Sections 3.5 - 3.6		
Mar 26 - Apr 2	Nada—just Test 2		
April 2 - 9	Section 4.4		
April 9 - 16	Section 5.1		
April 16 - 23	Sections 5.2 - 5.3		
April 23 - 30	Section 5.4		
Apr 30 - May 7	Section 5.5		