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1 Course Coordinator's Information

Coordinator	Coordinator's Email	Office	Office hours	zoom ID	Zoom Passcode
Niknejad, Jila	jila at ku.edu	651 Snow C	MWF 2:20-3:10 PM	983 9865 9842	104127

2 Instructors' Information, Class Time and Location

Instructor	Email/Zoom ID	Office	Section	Time	Classroom
Magzhan Biyar	magzhan.biyar@ku.edu	Tu 12-1 pm 537 Snow	14206	MTuWThF 8:00 - 8:50 AM	Learned 1131
Stratos Kyriakidis	ekyriakidis@ku.edu	Tu 11-12 pm 637 Snow	13871	MTuWThF 9:00 - 9:50 AM	Learned 1131
Jonathan Tremblay	jttrembl@ku.edu	Tu 11-12 pm 620 Snow	28221	MTuWThF 9:00 - 9:50 AM	Snow 306
Ritika Nair	rnair@ku.edu	W 12-1 557 Snow	11313	MTuWThF 10:00 - 10:50 AM	Learned 1131
Brandon Lee	bjlee@ku.edu	F 1-2 pm 623 Snow	28523	MTuWThF 10:00 - 10:50 AM	Snow 306
Noah Trist	noah.trist@ku.edu	M 2-3 pm 620 Snow	13267	MTuWThF 11:00 - 11:50 AM	Learned 1131
Jonathan Rosofsky	jonathan.rosofsky@ku.edu	W 2:30-3:30pm 553 Snow	11314	MTuWThF 12:00 - 12:50 PM	Learned 1131
Evan Olson	evan.olson@ku.edu	M 3-4 pm 555 Snow	11315	MTuWThF 01:00 - 01:50 PM	Learned 1131
Ryan Hunter	rehunter@ku.edu	M 11-12 637 Snow	11316	MTuWThF 02:00 - 02:50 PM	Learned 1131
Chris Mayo	cmayo@ku.edu	W 4-5 pm 553 Snow	13594	MTuWThF 3:00-3:50 PM	Learned 1131

3 Disclaimers and Subject to Change

This syllabus contains the basic information for MATH 104. Students should regularly visit the course Canvas page to find their exam scores, assignment scores, course announcements, assignments, detailed course schedule, and links to course materials.

Students must **regularly check both their KU email and the course Canvas page**.

The **“Total” column of Canvas grade book is not accurate** and we will post an excel sheet, called **grade-calculator**, for you to compute your grade after each exam.

4 Textbook and Required Items

Textbook: Precalculus, OpenStax, Abramson, Precalculus 1e (The electronic version of this textbook is **free** and can be obtained at <https://openstax.org/details/books/precalculus>. (Physical copies are also available at KU bookstore.)

Other Material Needed:

You will have **free access** to **MathMatize**, and Ebook through “Auto access” on Canvas.

All class notes are provided on canvas.

Zoom App: The classes, review session and help room are **in-person** but some of the instructors and SI may hold office hours on zoom.

Calculators for Midterms/Final Exams: **Only basic or scientific calculators** will be permitted while taking exams. Calculators must not have \int , $\frac{d}{dx}$, or lim keys. (TI 30 is recommended.)

Bringing a **Laptop Computer** to class is recommended. You may be able to borrow one from library (Link) for short periods of time.

5 Course Description, Learning Goals and Topics

Math 104 is 5 credit hour course. You should expect to spend **at least two hours** studying outside of class **for every hour** spent in class; **you should expect to work on this course for at least 10 hours outside the class every week**. Math 104 is an introduction to the elementary functions (polynomial, rational, exponential, logarithmic, and trigonometric) and their properties.

5.1 KU Core Outcomes

It satisfies: Goal 1 Outcome 2 (GE12), BA Quantitative Reasoning (QR), U Undesignated elective (U).

5.2 Prerequisite

MATH 002, or two years of high school algebra and a score of 22 or higher on ACT mathematics, or a qualifying score on the mathematics placement test. Open for only two hours credit for students with credit in MATH 101. Not open to students with credit in MATH 103.

The objective of the course is to acquire mastery of the material covered in the course in the following senses:

1. Mathematical understanding, as demonstrated by the ability to solve appropriate mathematical problems.

2. Practical understanding, as demonstrated by the ability to solve appropriate word problems in the sciences, in engineering and in the social sciences.

5.3 Learning Objectives

Analysis and Graphing of Functions

- Analyzing/ evaluating a function using a rule of the function, a table of values or a graph; using function notation; finding the domain and range of a function; writing the rule of a function; analyzing functions in applications; finding average rate of change; relating the average rate of change to the net change in piecewise defined and linear functions; recognizing extrema in graphs or in quadratic models.
- Using concepts of symmetry; intercepts, left- and right-hand behavior, asymptotes, and transformations; to sketch the graph of various types of functions (constant, linear, quadratic, absolute value, piecewise-defined, square root, cubic, polynomial, rational, exponential, and logarithmic).
- Writing equations of circle, ellipse, hyperbola given their descriptions.
- Performing $+$, $-$, \times , division, composition and inverse operations on functions; analyzing real-life application of these operations.

Solutions of Equations and Inequalities

- Solving linear, quadratic or cubic equations in one variable involving one or multiple parameter(s); solving equations involving radicals, rational expressions or absolute values; solving exponential and logarithmic equations.
- Solving systems of linear equations; understanding the geometry of the solution(s); inconsistent, distinct point or infinite. Performing Gaussian reduction; $+$, $-$, \times matrix operations. Knowing examples of non-commutative matrix products. Recognizing a vector as a matrix. Solving systems of non-linear equations.
- Solving linear, polynomial, rational or absolute value inequalities; by graphing.

Trigonometry

- Converting between radian measurement and degree measurement; understanding the relationship between radian and arc length of a circle; understanding angular velocity.
- knowing six trigonometric values of all angles; whose reference angles are special angles 0 , $\pi/6$, $\pi/4$, $\pi/3$, and $\pi/2$.
- Solving for an unknown sides/angles within right triangles.
- Graphing the six basic trigonometric functions and their arithmetic combinations; understanding the concepts of period, phase shift, amplitude, and vertical displacement.
- Deriving/verifying trigonometric identities, including but not limited to double angle, half angle, angle sum, and angle difference identities.
- Defining, graphing, and applying inverse trigonometric functions.
- Solving trigonometric equations; recognizing the difference between an identity and a trigonometric equation.
- Finding solutions of oblique triangles using the Law of Cosines and/or Law of Sines.
- Deriving the trigonometric form of complex numbers and perform calculations with them including products and quotients.
- Converting between rectangular and polar coordinates; graphing within the polar coordinate systems.
- Understanding basic parameterized curves; the conversion between parameterized curves and a function rule; understanding parameterized form of a circle, ellipse and hyperbola.
- Application of trigonometric functions including optimization; shadowing relating rates when one of the functions are linear.

5.4 Course Content

Chapter 1 : Functions

- Section 1.1: Functions and Function Notation
- Section 1.2: Domain and Range
- Section 1.3: Rate of Change and Behavior of Graphs
- Section 1.4: Composition of Functions
- Section 1.5: Transformation of Functions
- Section 1.6: Absolute Value Functions
- Section 1.7: Inverse Functions

Chapter 2 : Linear Functions

- Section 2.1/ 2.2: Linear Functions/ Graphs of Linear Functions
- Sections 2.3: Modeling with linear Functions

Chapter 3 : Polynomial and Rational Functions

- Section 3.1: Complex Numbers
- Section 3.2: Quadratic Functions
- Section 3.3: Power Functions and Polynomial Functions
- Section 3.4: Graphs of Polynomial Functions
- Section 3.5: Dividing Polynomials
- Section 3.6: Zeros of Polynomial Functions
- Section 3.7: Rational Functions
- Section 3.8: Inverse and Radical Functions

Chapter 4 : Exponential and Logarithmic Functions

- Section 4.1: Exponential Functions
- Section 4.2: Graphs of Exponential Functions
- Section 4.3: Logarithmic Functions
- Section 4.4: Graphs of Logarithmic Functions
- Section 4.5: Exponential & Logarithmic Properties
- Section 4.6: Exponential and Logarithmic Equations
- Section 4.7: Exponential and Logarithmic Models

Chapter 5 : Trigonometric Functions

- Section 5.1: Angles

Section 5.2: Unit Circle: Sine and Cosine Functions

Section 5.3: The Other Trigonometric Functions

Section 5.4: Right Triangle Trigonometry

Chapter 6 : Periodic Functions

Section 6.1: Graphs of Sine and Cosine

Section 6.2: Graphs of Other Trigonometric Functions

Section 6.3: Inverse Trigonometric Functions

Chapter 7 : Trigonometric Identities and Equations

Section 7.1: Solving Trigonometric Equations with Identities

Section 7.2: Sum and Difference Identities

Section 7.3: Double-Angle, Half-Angle, and Reduction Formula

Section 7.4: Sum-to-Product and Product-to-Sum Formula

Section 7.5: Solving Trigonometric Equations

Chapter 8 : Further Applications of Trigonometric Functions

Section 8.1: Non-right Triangles: Law of Sines

Section 8.2: Non-right Triangles: Law of Cosine

Section 8.3: Polar Coordinates

Section 8.4: Polar Coordinates: Graphs

Section 8.5: Polar Form of Complex Numbers

Section 8.6: Parametric Equations

Section 8.7: Parametric Equations: Graphs

Chapter 9 : Systems of Equations and Matrices

Section 9.1: Systems of Linear Equations: Two Variable

Section 9.2: Systems of Linear Equations: Three Variables

Section 9.3: Systems of Nonlinear Equations and Inequalities

Section 9.5: Matrices and Matrix Operations

Section 9.6: Solving Systems with Gaussian Elimination and Vectors

Chapter 10 : Analytic Geometry

Sections 10.1: The Ellipse, 10.2: The hyperbola and 10.3: The Parabola

6 Evaluation and Grading System

6.1 Grading System

A	B	C	D
$\geq 88\%$	$\geq 76\%$	$\geq 64\%$	$\geq 50\%$

Note that there are no plus/minus grades in the precalculus/calculus sequence. The letter grade cut-offs will not change at the end of the semester and there will not be a curve. However, many assignments and assessments will have extra credit opportunities. The following is a breakdown for MATH 104 showing the components of the course and how much each component is worth.

Final Exam	25%
Midterm 1	20%
Midterm 2	20%
Gateway Exam	10%
Daily MathMatize Homework	10%
12 Individual Work Upload and In-Person Group Work	6%
Participation	4%
10 In-class Quizzes	5%
6 Online Practice Quizzes (Extra Credit)	2%
Various Surveys (Extra Credit)	1%
3 Online Practice Exams (Extra Credit)	1%

Total= 25 + 20 + 20 + 10 + 10 + 6 + 4 + 5 = 100 and Extra credit: 2 + 1 + 1

6.2 Student Survey of Teaching

You will have multiple opportunities to provide feedback on your experience in this course including various surveys. Suggestions and constructive criticism are encouraged throughout the course and may be particularly valuable early in the semester through those surveys. You will also be asked to complete an end-of-semester, online anonymous Student Survey of Teaching, which could inform modifications to this course and other courses that I teach in the future.

7 Important Dates and Exams

7.1 Paper Gateway, Midterm and Final Exams

Paper Gateway exams and Midterm exams are graded by MATH 104 instructors. All questions in paper gateway exam is posted. Midterm Exams from previous semester(s) will be posted on Canvas 10 days before the exam dates.

Exam	Day	Date	Time	Room	Content
Paper Gateway	Tuesday	October 10 th	During Class	In class	Function Operations, Expression Simplification and Solving Equations
Midterm 1	Tuesday	September 26 th	5:50-7:50 PM	110 Budig and 150 JPR	Chapters 1-3 and Sections 4.1-4.2
Midterm 2	Tuesday	October 31 th	5:50-7:50 PM	110 Budig and 150 JPR	Chapters 5-6, Sections 4.7 and 7.1-7.5
Final Exam	Thursday	December 14 th	4:30-7 PM	Location: TBA	Accumulative

7.2 The Gateway Exams

Students can earn a score of 0 or 10 on the Gateway. Students earn full credit by passing either the paper (written) Gateway Exam or the computerized in-lab Gateway Exam retakes. Information about the MathMatize Gateway Exams, including deadlines and location is given below; we will confirm the information on the course's Canvas page closer to those dates.

Exam	Date(s)	Place		
Paper Gateway Tuesday	October 10 th	In Class	Link: Questions	Link: prep-videos.
Computerize Retake	Weeks 9-10 (10/18-10/27) and Week 12 (11/6-11/7)	Snow 159	MTuWThF	Tentatively 1-5PM

A paper (written) Gateway Exam will be administered in Class sections during the 2nd class session of Week 8. Students who correctly answer 7, 8, 9, or 10 out of the 10 questions earn full credit and **do not** need to retake the In-Lab Gateway Exam.

7.3 Withdrawal Dates

Day	Date	Type
Monday	September 11 th , 2023	Last day to withdraw/drop without a “W”
Wednesday	November 15 th , 2023	Last day to withdraw from a class or the University

8 Course Format and the Teaching Methods

8.1 MathMatize


A heartfelt statement: MathMatize is a fairly new online homework systems start-up company who provides highly affordable systems to some of top universities in Canada and US. KU is using the system for the first time in Fall 2023 in Math 104. It has been approved for accessibility, privacy and security by our wonderful KU IT who put a priority on it when they learned it is going to be free of charge for our students. Your course coordinator was able to convert some salary money to a grant to pay for the whole class (this was affordable because the two wonderful company owner/employee only charge for devices they use and not much or any for their salary). The course coordinator is planning to find actual grants for following years so the system remains free for KU students whether or not she coordinate Math 104 again.

Most traditional online homework systems have old fashioned methods of collecting answers, higher charges that falls on students and even when they change they lag the innovative course creation that we do at KU by years. Each course’s questions, in a traditional company, is written by a large team of full-time course developer over course of year which contributes to the cost and lag in deployment. Their systems are developed and maintained by a large team too.

Faculty have to write their own questions in MathMatize. Your course coordinator, who has a lot of experience in writing questions in multiple online platforms, used and is using her free time to write the questions in MathMatize and your wonderful instructors will proof-read this for us. We are expecting a few bumps throughout the semester and we will often ask you your opinion on how to make things better. I am also very responsive toward your queries so feel free to stop by or email if you think there is a glitch.

Important Notes when using MathMatize.

- Start each MathMatize section before that section is covered in class.
- Take **organized Notes** for each question on a notebook for the Mathmatize. After each due date we reopen the assignments again within a week. Due dates are on Fridays.
- After each due date, if you plan to complete the assignment for 100%, you need to start from scratch so your notes are going to be helpful to you.
- After entering values for **each problem**, press **CHECK** to get instant feedback and save your answer. Check is disabled when you are taking an exam on MathMatize.

- Do **NOT** press  unless the due date is approaching or when you are taking an exam on MathMatize.

8.2 The Structure of the Class and Course Requirements

Your class meets five times per week, in person, at the same time of the day. Your instructor will go briefly over the material for a few minutes; you work in groups for the rest of the time; your instructor will visit each group or make quick instructions when you are working in groups. The first five chapters of the book is an extensive review of algebra; the next five sections cover trigonometry, systems of equations, parametric curves, and conical cross sections. Print the worksheets before the class if possible; or write the questions in your notebook. Having a computer in class is beneficial.

8.3 Summary of the Structure of Assignments and Assessments

Participation	For every class, there is a lecture note or a worksheet. There are questions in these notes and worksheet to be done in class. If you are contributing to the group work and completing your notes or MathMatize for corresponding section, you will earn 100% of that day. If you are late or not participating, you may earn 50% or 0% of that day's attendance and will be marked "late" or "absent".
Gateway Exam	Each exam contains 10 questions on Function Operation, Expression Simplification and Solving Equations. Pass score is 70% or higher; 10 points will be awarded if you pass. If you score below 70%; 0 points will be awarded. A paper Gateway exam will be given in the 2 nd class session of Week 8. If you didn't pass the paper gateway, multiple computerized retakes will be available in Weeks 9-10 (10/18-10/27) and Week 12 (11/6-11/7) in Snow 159.
In-class Quizzes	They are low stake assessments that may help in reducing the testing anxiety for other assessments by giving you practice. Each covers 2-3 learning objectives. Five of these quizzes are in preparation for Gateway exams; no partial credit will be awarded on any individual questions.
Online Practice Quizzes	Some of the quizzes come with an online practice quiz to prepare you for that quiz. (Extra Credit.) You can find them on the weekly modules.
Online Practice Exams	There are Online and In-person Practice Exams for evening Midterms and Final exams. The completion of the online version is Extra Credit. You can find them on the weekly modules.
Midterm & Final Exams	They are administered in the evenings. They come with review sessions and practice exams
MathMatize Homework	Find a link on the week's Canvas module. MathMatize Homework gives you instant feedback. You have infinite attempts for each assignment. We suggest that you start them before the lecture and complete during the class or right after. The MathMatize assignment remains open after the suggested due date; complete them without any penalty.
Worksheets: Group work & Individual Work	There are twelve Worksheets during the semester. Each of these worksheet have a section for notes, a few questions to do in groups and individual work questions. Sometimes the worksheets are combined with lecture notes; they can look like any lecture notes but they are marked as worksheet. Read the worksheets before the class; come in prepared and work on group work in your groups. Each member of groups should write a problem so make sure that you do your work. Ask questions from your instructor. You may work on the individual part of the worksheet together but write your own work and upload to Canvas or submit in class before due date. Up to 2 points of group work will be awarded in class and the individual work will be graded for correctness out of 8 points; total of 10 points. Again, you do group work in class everyday; the worksheet group work needs to be completed in class and you get more feedback on it in class.

8.4 The Participation and Excused Attendance

- (A) If you have a school sanctioned reason that will cause you to miss class for more than 5 consecutive working days or more than 10 non-consecutive working days, have the appropriate office contact us. If the reason you are missing class is personal or chronic illness, you may contact <https://studentaffairs.ku.edu/student-affairs-departments> or <https://access.ku.edu/> to document your illness. They will communicate the excuse with us with minimal information. Also, in extreme situations, students may not realize how difficult it is to recover from missed instructions and assignments; they may become too overwhelmed to find alternative options. SAC is one of the offices on campus that can assist in these type of scenarios.
- (B) If you have an excused absence and your total absence does not fall in the first category, described in Part (A), notice that Part (C) is explaining that you can miss class up to 7 days a semester and get 100% attendance points. If you still wish to make up the points, you may email us a documents such as a doctor's note ¹, a COVID positive test, a court hearing letter, an accident police report and etc; please **cover all sensitive information** except for your name, excused date(s) and the title of document. We do not need to know about the details or sensitive information. We will contact you with attendance make up instructions.
- (C) You can earn participation points following these instructions.
- By attending each class and working on each worksheets in your groups; you will earn 100% participation for that day.
 - If you are late for the class, not attending or not participating, you may earn 50% or 0% participation for that day; in that case, you will be marked late or absent.
 - 90% and more attendance points is considered full participation. For < 90% attendance, we divide by 0.9.
- (D) Note that when the number of absence in class increases, students become overwhelmed with material; their chances of success decreases. Please come to class; bring your positive attitude; interact with your instructor and other students. Make sure your instructor knows who you are; they can help you when you need it. Come to class to make friends in your major; positive human interaction helps you with math and life in general; contributing to your success in both is on our agenda.
- (E) For each day of excused absence, we will ask you to attend office hours or help room hours for the duration of the class and get a signature from your instructor or the Help room instructor. Contact your instructor to learn more.

9 Excused Absence and Making Up Missed Work

9.1 Exams

Students with a conflict with another course or a verifiable excuse, temporary orders necessitating the absence of those in the US Armed Forces, sanctioned university activities, or a medical crisis of themselves, a relative, or friend may be excused from being present. It is the responsibility of the student to initiate discussion with their instructor or graduate teaching assistant prior to the absence examination/test if possible. Students can formally request their exam to be rescheduled due to a conflict by completing an Exam Conflict form which will be forwarded 10 days before the exam is scheduled.

¹Some of the Watkins Health Center services are free for full time students. Please find out more.

9.2 Assignments

As for making up assignments, the online assignments' due dates are flexible and you can complete the assignments after the due date without losing any points. There are additional points available in the course so you can make up 100% of lecture attendance even if you miss a few classes. If you miss a lecture day with a valid excuse and even if the solutions are posted, we ask you to make up the attendance in the help room, office hours or other formal settings; please make sure to get a GTA attendee or an instructor's signature.

9.3 Documentation

If are making up the work, you may email us a documents such as a doctor's note ², a COVID positive test, a court hearing letter, an accident police report and etc; please **cover all sensitive information** except for your name, excused date(s) and the title of document. We do not need to know about the details or sensitive information. We will contact you with attendance make up instructions. In extreme cases, we recommend communicating with Student affairs, SAC or Caps to get the appropriate help.

- Excused Policy

10 Keys to Success in Math 104

- Come to class prepared to learn and engage with the material! Watch the videos if you need help.
- After each class, review the material and do the assigned work ahead of their due dates.
- Prepare for the next class meeting:
 - Visit Canvas to check the schedule and announcements.
 - Read the upcoming section in the textbook.
 - Find help! Take advantage of both your lecturer and your laboratory leader's office hours. Visit the Calculus Help Room! The help room schedule can be found on the course Canvas.
- Study! Gather a group of friends and regularly work and study together using the Help room (Snow 651).

10.1 General Comments on Study Habits

Regular class attendance is important for success in this course. Even if you've taken a previous Calculus course, this course is likely to be taught from a more sophisticated perspective, and if you think this class will be review, you are probably mistaken. You should expect to spend **at least two hours** studying outside of class **for every hour** spent in class; **you should expect to work on this course for at least 10 hours outside the class every week.** In contrast to most high school math classes, if you don't understand the topics being covered, you should NOT assume that your instructor will repeat material until you understand or master it. Ideally, you should ask questions at the time in class. Of course, you will also probably need to spend time thinking things through on your own, but if you've tried that and are still confused, make use of the Calculus Help Room and instructor office hours. Don't wait! Mathematics is cumulative, so anything you don't understand now is likely to keep giving you trouble as the semester goes on.

²Some of the Watkins Health Center services are free for full time students. Please find out more.

10.2 Math Help

Every instructor and graduate teaching assistant is available for help outside the classroom, see individual instructor information to find times and locations. The Mathematics Help Room is in Snow 651 and is staffed by helpful and competent mathematics graduate teaching assistants. Before searching for a private tutor, be sure to visit either your instructor or the Mathematics Help Room as they are free for KU students. The schedule of Help Room will be posted on Canvas on the second week of classes. Group tutoring and individual tutoring are also available through KU Learning center: <https://learning.ku.edu/tutoring>.

10.3 Supplemental Instruction (SI)

Supplemental Instruction, or SI, is available for this class. SI Leaders are students who have taken the class and now, as SI Leaders, they attend the class lectures and lead engaging and activity-based sessions to review course material outside of the classroom. The sessions are free, voluntary, and provide an opportunity for students to meet other students in class, discuss important concepts, and develop effective study strategies. Data has shown that students who regularly attend and actively participate in SI Sessions have the potential to do well on exams and receive strong grades in their course. Specific information about SI for this course including the days, times, campus locations, and Zoom URLs (and passcodes) of SI Sessions and Office Hours will be announced the second week of classes. For more information about SI, visit the Academic Learning Center website at <http://learning.ku.edu> and click on Supplemental Instruction from the main menu. The SI Leaders for MATH 104 this semester are Evans and Wendy.

10.4 Jayhawk GPS

This course utilizes Jayhawk GPS, a student success technology that is designed to inform your academic success at the University of Kansas. As your instructor, I may communicate your course performance to you and your assigned academic advisor through Jayhawk GPS if I believe you might benefit from additional resources or support at KU. This notification will prompt an email to your student account and a Student Navigator, your advisor or another member of your Student Success Team may reach out to you through email, phone or text as well. Please be sure your contact information is accurate in Enroll & Pay so that they may reach you. Texting has an opt out option by replying "STOP" to any incoming messages. You can access your Jayhawk GPS / Navigate login using this link <https://jayhawkgps.ku.edu/navigate-student-app> to schedule appointments online with your assigned academic advisor and other resource staff across the KU campus.

11 Additional Policies

11.1 Commercial Note Taking

Pursuant to the University of Kansas' Policy on Commercial Note-Taking Ventures, commercial note-taking is not permitted in Math 104. Lecture notes and course materials may be taken for personal use, for the purpose of mastering the course material, and may not be sold to any person or entity in any form. Any student engaged in or contributing to the commercial exchange of notes or course materials will be subject to discipline, including academic misconduct charges, in accordance with University policy. Please note: note-taking provided by a student volunteer for a student with a disability, as a reasonable accommodation under the ADA, is not the same as commercial note-taking and is not covered under this policy.

11.2 Diversity and Inclusion

All students are welcome in this course, regardless of age, ability, background, belief, ethnicity, gender, gender identity, gender expression, religious affiliation, sexual orientation, and socioeconomic status. Instructors and students are both expected to contribute positively to an environment that respects the identities of others and welcomes diversity. If you are experiencing discrimination and/or harassment, please consider reaching out to any of your specific instructors or to the course coordinator (jila@ku.edu). If your instructor or coordinator is causing you harm and you do not feel comfortable approaching the individual, there are additional resources on campus to support you, such as:

- Office of Diversity, Equity, Inclusion, and Belonging
- Diversity and Inclusion Policy
- Racial and Ethnic Harassment Policy
- Nondiscrimination, Equal Opportunity, and Affirmative Action
- Center for Sexuality and Gender Diversity
- Office of Civil Rights and Title IX
- Sexual harassment Policy
- Mandatory Reporting (Title IX)
- Student Rights and Responsibilities

11.3 Grade Disputes

All graded material will be become available on Canvas. You can view the feedback by clicking on the grades. The instructors of MATH 104 will check the grading of any assignment if the assignment was graded within the past two weeks; after two weeks, the instructors are not obligated to check the grading of an assignment.

- Policy Statement
- Grade Change Policies

11.4 Group Work and Tutors

Students may discuss homework/Worksheet problems in groups, but each student is responsible for doing their own work and for turning in individual solutions. When a student works with a tutor, it is the responsibility of both the student and the tutor to ensure that it is the student who works to arrive at the solution of the problems. Tutors should not do student homework or provide solutions for assignments. Members of the class are encouraged to study together, but EACH must write out their own solutions to the assigned problems. Copying of another person's homework is not allowed. HOMEWORK IS A MAJOR PART OF THE LEARNING PROCESS IN MATHEMATICS. It is essential that you work on problems on your own and do the homework on a regular basis.

11.5 Intellectual Property

- Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor.
- Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited.
- Permission to make such recordings may be granted by the instructor on a case-by-case basis, on the condition that the individual making the recording uses these recordings only as a study aid.
- Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions and course content may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

11.6 KU Firearm Policy

Individuals who choose to carry concealed handguns are solely responsible to do so in a safe and secure manner in strict conformity with state and federal laws and KU weapons policy. Safety measures outlined in the KU weapons policy specify that a concealed handgun:

- Must be under the constant control of the carrier.
- Must be out of view, concealed either on the body of the carrier, or backpack, purse, or bag that remains under the carrier's custody and control.
- Must be in a holster that covers the trigger area and secures any external hammer in an un-cocked position
- Must have the safety on, and have no round in the chamber.

11.7 Late Policy for Assignments

MathMatize Homework can be completed after the deadline and no penalty will apply. All MathMatize Homework assignments close permanently at 11:59pm on Thursday, Dec. 7th. No late worksheets please! The solutions to worksheets will be posted on Canvas within a week from the due date. No late worksheet please.

11.8 Policy on Academic Misconduct

You are required to abide by all KU policies on academic integrity. Cheating, plagiarism or other academic misconduct will result in a failing grade on the assignment in question, notification of the student's dean, and usually further disciplinary sanctions, possibly including a failing grade in the course. You are encouraged to collaborate with other students on the homework assignments. However, each student must write up his or her own solutions and acknowledge all collaborators. Copying someone else's homework, or allowing someone else to copy yours, is considered to be a form of cheating. For more information, see KU's official policies on academic misconduct at <http://policy.ku.edu/governance/USRR#art2sect6>.

11.9 Policy on Masks

We follow the guideline in University policy.

11.10 Policy on Students with Special Needs

The KU Office of Student Access Services (SAC) coordinates accommodations and services for all eligible students with disabilities. If you have a disability and wish to request accommodations, you should contact SAC as soon as possible (22 Strong Hall; 785-864-4064 (V/TTY); <http://access.ku.edu/>). We also recommend that you contact your instructor and graduate teaching assistant privately in regard to your needs in this course.

11.11 Religious Holidays

Any student in this course who plans to observe a religious holiday which conflicts in any way with the course schedule or requirements should contact your instructor before the end of the third week of classes to discuss alternative accommodations. Religious Observances

12 Tentative Schedule

Math 104 - Precalculus Fall 2023 Schedule

Week 1:

Lecture #	Day	Date	Section(s)
Day 1	Monday	8/21	Introduction and Factoring (Group Work 1)
Day 2	Tuesday	8/22	1.1: Functions and Function Notation (Mini Projects)
Day 3	Wednesday	8/23	Review and Catch up (Start 1.2 if time is left.)
Day 4	Thursday	8/24	1.2: Domain and Range
Day 5	Friday	8/25	1.3: Rate of Change and Behavior of Graphs
Due Dates	Day	Date	Assignments
	Friday	8/25	Individual Work 1: Section(s) Factoring and Solving (Upload to Canvas)
	Friday	8/25	MathMatize Homework: Section(s) Factoring, 1.1 - 1.2 (Links on your Canvas' Weekly Modules)

Week 2:

Lecture #	Day	Date	Section(s)
Day 6	Monday	8/28	1.4: Composition of Functions(Group Work 2)
Day 7	Tuesday	8/29	1.5: Transformation of Functions
Day 8	Wednesday	8/30	1.6: Absolute Value Functions
Day 9	Thursday	8/31	Review and Catch up Quiz 1: Factoring and Solving, 1.1, 1.3
Day 10	Friday	9/1	1.7: Inverse Functions
Due Dates	Day	Date	Assignments
	Friday	9/1	Individual Work 2: Section(s) 1.3 - 1.7 (Upload to Canvas)
	Friday	9/1	MathMatize Homework: Section(s) 1.3 - 1.6 (Links on your Canvas' Weekly Modules)

Week 3:

Lecture #	Day	Date	Section(s)
	Monday	9/4	Labor Day (No School)
Day 11	Tuesday	9/5	2.1/ 2.2: Linear Functions/ Graphs of Linear Functions
Day 12	Wednesday	9/6	2.3: Modeling with linear Functions (Group Work 3)
Day 13	Thursday	9/7	Review and Catch up Quiz 2: 1.4
Day 14	Friday	9/8	3.1: Complex Numbers
Due Dates	Day	Date	Assignments
	Friday	9/8	Individual Work 3: Section(s) 2.1 - 2.3 (Upload to Canvas)
	Friday	9/8	MathMatize Homework: Section(s) 1.7, 2.1 - 2.3 (Links on your Canvas' Weekly Modules)

Day	Date	Type
Monday	September 11 th , 2023	Last day to withdraw/drop without a "W"

Week 4:

Lecture #	Day	Date	Section(s)
Day 15	Monday	9/11	3.2: Quadratic Functions
Day 16	Tuesday	9/12	3.3: Power Functions and Polynomial Functions
Day 17	Wednesday	9/13	3.4: Graphs of Polynomial Functions (Group Work 4)
Day 18	Thursday	9/14	Review and Catch up Quiz 3: 1.7
Day 19	Friday	9/15	3.5: Dividing Polynomials
Due Dates	Day	Date	Assignments
	Friday	9/15	Individual Work 4: Section(s) 3.1 - 3.2 (Upload to Canvas)
	Friday	9/15	MathMatize Homework: Section(s) 3.1 - 3.2, 3.3-3.4 (Links on your Canvas' Weekly Modules)

Week 5:

Lecture #	Day	Date	Section(s)
Day 20	Monday	9/18	3.6: Zeros of Polynomial Functions
Day 21	Tuesday	9/19	3.7: Rational Functions (Group Work 5)
Day 22	Wednesday	9/20	3.8: Inverse and Radical Functions
Day 23	Thursday	9/21	4.1: Exponential Functions
Day 24	Friday	9/22	4.2: Graphs of Exponential Functions
Due Dates	Day	Date	Assignments
	Friday	9/22	Individual Work 5: Section(s) 3.3-3.7 (Upload to Canvas)
	Friday	9/22	MathMatize Homework: Section(s) 3.5-3.6,3.7-3.8 (Links on your Canvas' Weekly Modules)

Optional-Review	Day	Date	Time and Place
Exam Review	Friday	9/21	5:00 pm – 7:30 pm, Wescoe 3139
Practice-Exam	Sunday	9/23	Time TBA, Place: LEEP 2

Week 6:

Lecture #	Day	Date	Section(s)
Day 25	Monday	9/25	Exam Review Quiz 4: 3.1, 3.2 and Radical Equations
Day 26	Tuesday	9/26	Exam Review
Midterm 1			5:50-7:50 PM Room: 110 Budig and 150 JPR Chapters 1-3 and Sections 4.1-4.2
Day 27	Wednesday	9/27	4.3: Logarithmic Functions
Day 28	Thursday	9/28	4.4: Graphs of Logarithmic Functions
Day 29	Friday	9/29	4.5: Exponential & Logarithmic Properties
Due Dates	Day	Date	Assignments
			Individual Work (No Assignment)
	Friday	9/29	MathMatize Homework: Section(s) 4.1-4.2 (Links on your Canvas' Weekly Modules)

Week 7:

Lecture #	Day	Date	Section(s)
Day 30	Monday	10/2	4.6: Exponential and Logarithmic Equations(Group Work 6)
Day 31	Tuesday	10/3	4.7: Exponential and Logarithmic Models
Day 32	Wednesday	10/4	Review and Catch up (Mini Projects 2)
Day 33	Thursday	10/5	Review and Catch up Quiz 5: Section 3.7 and Chapter 4
Day 34	Friday	10/6	5.1: Angles
Due Dates	Day	Date	Assignments
	Friday	10/6	Individual Work 6: Section(s) 4.1-4.7 (Upload to Canvas)
	Friday	10/6	MathMatize Homework: Section(s) 4.1-4.7 (Links on your Canvas' Weekly Modules)

Week 8:

Lecture #	Day	Date	Section(s)
Day 35	Monday	10/9	5.2: Unit Circle: Sine and Cosine Functions
Day 36	Tuesday	10/10	Review and Catch up and Paper Gateway
Day 37	Wednesday	10/11	5.3: The Other Trigonometric Functions(In-Class Group Practice Quiz, 5.1-5.2)
Day 38	Thursday	10/12	5.4: Right Triangle Trigonometry (Group Work 7)
Day 39	Friday	10/13	6.1: Graphs of Sine and Cosine(Introduction) Quiz 6: Sections 5.1 and 5.2
Due Dates	Day	Date	Assignments
	Wednesday	10/18	Individual Work 7: Section(s) 5.1-5.4 (Upload to Canvas)
	Friday	10/13	MathMatize Homework: Section(s) 5.1-5.4 (Links on your Canvas' Weekly Modules)

Snow 159 is Open for Gateway retake in Week 9, 10/18.

Week 9:

Lecture #	Day	Date	Section(s)
	Monday	10/16	Fall Break! (No School)
	Tuesday	10/17	
Day 40	Wednesday	10/18	6.1: Graphs of Sine and Cosine & Graphs of Other Trigonometric Functions 6.2:
Day 41	Thursday	10/19	6.3: Inverse Trigonometric Functions (Group Work 8)
Day 42	Friday	10/20	7.1: Solving Trigonometric Equations with Identities
Due Dates	Day	Date	Assignments
	Friday	10/20	Individual Work 8: Section(s) 6.1-6.3 (Upload to Canvas)
	Friday	10/20	MathMatize Homework: Section(s) 6.1-6.3 (Links on your Canvas' Weekly Modules)

Gateway retake will close in Snow 159 on Week 10, 10/27. The retake Lab will reopen on Week 12 for two days on Monday 11/6 and Tuesday 11/7.

Week 10:

Lecture #	Day	Date	Section(s)
Day 43	Monday	10/23	7.2: Sum and Difference Identities
Day 44	Tuesday	10/24	7.3: Double-Angle, Half-Angle, and Reduction Formula
Day 45	Wednesday	10/25	7.4: Sum-to-Product and Product-to-Sum Formula
Day 46	Thursday	10/26	7.5: Solving Trigonometric Equations(Group Work 9)
Day 47	Friday	10/27	Review and Catch up Quiz 7: 6.1 - 6.3
Due Dates	Day	Date	Assignments
	Friday	10/27	Individual Work 9: Section(s) 7.1-7.6 (Upload to Canvas)
	Friday	10/27	MathMatize Homework: Section(s) 7.1-7.5 (Links on your Canvas' Weekly Modules)

Optional-Review	Day	Date	Time and Place
Exam Review	Friday	10/27	5:00 pm – 7:30 pm, Wescoe 3139
Practice-Exam	Sunday	10/29	Time TBA, Place: LEEP 2

Week 11:

Lecture #	Day	Date	Section(s)
Day 48	Monday	10/30	Exam Review Quiz 8: Section 7.5
Day 49	Tuesday	10/31	Exam Review
Midterm 2			5:50-7:50 PM Room: 110 Budig and 150 JPR Chapters 5-6, Sections 4.7 and 7.1-7.5
Day 50	Wednesday	11/1	7.6: Modeling with Trigonometric Equations
Day 51	Thursday	11/2	8.1: Non-right Triangles: Law of Sines
Day 52	Friday	11/3	8.2: Non-right Triangles: Law of Cosine

Due Dates	Day	Date	Assignments
			Individual Work (No Assignment)
	Friday	11/3	MathMatize Homework: Section(s) 7.6 (Links on your Canvas' Weekly Modules)

Week 12:

Lecture #	Day	Date	Section(s)
Day 53	Monday	11/6	8.3: Polar Coordinates(Gateway Lab opens again.)
Day 54	Tuesday	11/7	8.4: Polar Coordinates: Graphs(Last day of Gateway Lab.)
Day 55	Wednesday	11/8	8.5: Polar Form of Complex Numbers(GroupWork 10)
Day 56	Thursday	11/9	Review and Catch up Quiz 9: 7.6, 8.1-8.3
Day 57	Friday	11/10	8.6: Parametric Equations

Due Dates	Day	Date	Assignments
	Friday	11/10	Individual Work 10: Section(s) 8.1-8.4 (Upload to Canvas)
	Friday	11/10	MathMatize Homework: Section(s) 8.1-8.2 (Links on your Canvas' Weekly Modules)

Day	Date	Type
Wednesday	November 15 th , 2023	Last day to withdraw from a class or the University

Week 13:

Lecture #	Day	Date	Section(s)
Day 58	Monday	11/13	8.7: Parametric Equations: Graphs
Day 59	Tuesday	11/14	Review and Catch up (Group Work 11)
Day 60	Wednesday	11/15	9.1: Systems of Linear Equations: Two Variable
Day 61	Thursday	11/16	9.2: Systems of Linear Equations: Three Variables
Day 62	Friday	11/17	9.3: Systems of Nonlinear Equations and Inequalities

Due Dates	Day	Date	Assignments
	Friday	11/17	Individual Work 11: Section(s) 8.3-8.7 (Upload to Canvas)
	Friday	11/17	MathMatize Homework: Section(s) 8.3-8.4 (Links on your Canvas' Weekly Modules)

Week 14:

Lecture #	Day	Date	Section(s)
Day 63	Monday	11/20	9.5: Matrices and Matrix Operations
Day 64	Tuesday	11/21	9.6: Solving Systems with Gaussian Elimination and Vectors
	Wednesday	11/22	Thanks Giving! (No School)
	Thursday	11/23	Thanks Giving! (No School)
	Friday	11/24	Thanks Giving! (No School)

Due Dates	Day	Date	Assignments
			Individual Work (No Assignment)
	Friday	11/24	MathMatize Homework: Section(s) Sections: 9.1-9.5 (Links on your Canvas' Weekly Modules)

Week 15:

Lecture #	Day	Date	Section(s)
Day 65	Monday	11/27	9.6: Solving Systems with Gaussian Elimination and Vectors (Group Work 12)
Day 66	Tuesday	11/28	Review and Catch up Quiz 10: Section 9.5 and 9.6
Day 67	Wednesday	11/29	10.1: The Ellipse
Day 68	Thursday	11/30	Review and Catch up
Day 69	Friday	12/1	10.2: The hyperbola
Due Dates	Day	Date	Assignments
	Friday	12/1	Individual Work 12: Section(s) 9.1-9.6 (Upload to Canvas)
	Friday	12/1	MathMatize Homework: Section(s) 8.5-8.7 (Links on your Canvas' Weekly Modules)

Week 16:

Lecture #	Day	Date	Section(s)
Day 70	Monday	12/4	10.3: The Parabola
Day 71	Tuesday	12/5	Review and Catch up (If any assessment is eligible for retake, we will schedule it for this day.)
Day 72	Wednesday	12/6	Final Exam Review
Day 73	Thursday	12/7	Final Exam Review
	Friday	12/8	Stop Day! (No School)
Due Dates	Day	Date	Assignments
			Individual Work (No Assignment)
	Thursday	12/7	MathMatize Homework: Section(s) 10.1-10.3 (Links on your Canvas' Weekly Modules)

Optional-Review	Day	Date	Time and Place
Exam Review	Friday	12/8	9:00 am - 12:00 pm, Wescoe 3140

Final Exam	Thursday	December 14 th	4:30 - 7 PM	Location: TBA
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KU Mathematics - J. Niknejad