MATH 1010K Departmental Syllabus Transitional Mathematics for General Studies

Course Description:Transitional Mathematics for General Studies. Three credits; four classroom hours plus a required one-hour MyMathLab component each week.This is a special section of MATH 1010 with additional content addressing deficiencies that may hinder successful completion of the course. It is not a prerequisite to Math for General Studies (MATH 1010). It is an equivalent course and satisfies the General Education requirement and is part of the mathematics sequence for elementary school teachers. Topics covered include logic, sets, algebraic reasoning, probability, descriptive statistics, and consumer mathematics. Additional content includes polynomials, factoring, equations, inequalities, scientific notation, function notation, graphing, and algebra in problem solving.

Prerequisites: Two years of high school algebra and/or results of university assessments.

Pretest: A pretest is available to verify placement in this prescribed course. It has 40 questions, a 90 minute time limit, must be proctored, and a score of 28 or greater would indicate the student can change to a non-prescribed MATH 1010 course or a prescribed MATH 1710K course. No student can test out if repeating this course.

# Instructor Information:

**Instructor: Thomas K. Torku Semester: Spring 2023**

**Section: K02 MWF 10:00-11:15 am**

**Classroom: KOM 160**

**Office: KOM 125A E-mail/Phone:** thomas.torku[@mtsu.edu](mailto:lfisher@mtsu.edu)/6158985904

**Office Hours:** MW 8:00-10:00am, TR 12:00-2:00pm, 4:00-6:00pm**.**

# Text & Materials:

[MyMathLab](http://www.mymathlab.com/): an access code must be purchased so online homework may be completed at the web address: www.MyMathLab.com.

**Access Code: torku07055**

**Text** (is included on MML or may be purchased as hard copy)**:** *Mathematical Ideas*, Miller, Heeren, Hornsby, & Heeren, 14th Edition.

**Calculator:** A TI-83/83+/84/84+ graphing calculator is required for the course.  All calculator instruction will be given specific for these calculators. There are some calculators that are not allowed.These are theTI-89 series, TI-92 series, TI-Inspire CAS/CX CAS calculators, and any other calculator with CAS. Check with your instructor if you have questions.

Math Lab: The University Studies Math Lab is located in KOM 124.It is staffed with undergraduate and graduate student tutors to support students in University Studies Math courses (1000KC, 1010K, 1530K, 1710K).  Math tutoring will be offered in-person *and* online through Zoom.  Please be prepared when using tutoring services:  have class notes, calculator, pencil, paper, and any material used in class. The hours of operation for in-person and online tutoring:  Mon. – Thurs. 9:00am – 7:00pm,

Fri. 9:00am – 2:00pm, Online tutoring only on Sundays on Zoom:  2:00pm – 6:00pm

Zoom by using the link <https://www.mtsu.edu/studentsuccess/tutoring.php>

Students may also contact tutors via an email [USmathtutoring@mtsu.edu](mailto:USmathtutoring@mtsu.edu)

Free tutoring is also provided for other courses at the [Tutoring Spot](http://mtsu.edu/studentsuccess/tutoring.php) which will be delivered both in-person and remotely. Visit their website (https://mtsu.edu/studentsuccess/tutoring.php) or call 615-904-8014 for more information. We invite you to get help before it is too late by taking advantage of this free tutoring resource.

# COVID-19 Policies. For more information, go to <https://www.mtsu.edu/coronavirus/index.php> or <https://mtsu.edu/stayoncourse/students/docs/covid19-whatif.pdf>.

Attendance: Students should not attend an on-ground, in-person class if they are ill, have any symptoms listed in the Pre-Class COVID-19 Self-Assessment, have tested positive for COVID-19, or have been in close contact with others who have tested positive. If they have tested positive or have been in close contact with someone who has, they should self-quarantine. Students are expected to keep their instructors informed regarding their status when they are absent from class and act with good faith and honesty when determining whether or not they attend class. For more information, see <https://www.mtsu.edu/policies/academic-affairs-students/311-A.php>.

The instructor will keep a record of attendance for each student. [Note: Attendance and Make-up Policies will be at the instructor’s discretion.] Participation in University sanctioned activities or in military duties and situations where the institution’s policy on inclement weather is applicable are considered excused absences. However, non-attendance does not relieve a student of the responsibility for work covered or assigned. **An Attendance Report will be generated during the first two weeks of class and periodically thereafter. This could affect the student’s financial aid and/or scholarships.**

Masking: All students, faculty, and staff must be masked while inside buildings on campus. Masks are defined as disposable single-use paper masks, cloth face coverings with ear loops or ties, balaclavas, gaiters, and bandanas that cover the nose and mouth. Students who cannot wear a mask for medical reasons must have a written accommodation from the Disability and Access Center (<https://www.mtsu.edu/dac/index.php>).

Course Purpose: The goal of this course is to expand students’ understanding of mathematics beyond the entry-level requirements for college. Topics include problem solving, set theory, logic, counting methods, probability, statistics, and financial management. The student’s mathematical skills are fostered in the areas of mathematical modeling with applications, problem solving, critical thinking skills, and the use of appropriate technologies.

Learning Outcomes:Upon completion of this course with a passing grade, the student will:

* Use inductive reasoning to generate hypotheses from identifiable mathematical patterns.
* Use logical operators in applications of deductive reasoning.
* Illustrate and prove set relationships using Venn diagrams.
* Carry out combined set operations & use the tools of set theory to solve problems involving surveys.
* Use concepts of logic and set theory to analyze logical arguments.
* Use counting techniques and determine the probability of, odds for, and odds against given events.
* Generate descriptive statistics, including measures of central tendency, measures of dispersion and measures of position, for given data sets.
* Develop and utilize formulas involving simple and compound interest.
* Solve problems involving truth in lending, amortization of loans, and financial investments.
* Apply processes of problem-solving (including the tool of algebra) in the various mathematical content areas of the course.
* Recognize connections between various mathematical content areas of the course; for example, set theory and probability (the sample space for an experiment is a set); probability and statistics (the area under the normal curve is a probability); mathematics of finance and algebra (the formula for future value of money under compound interest is the nth term of a geometric sequence); logic and set theory (logical arguments can be analyzed using Venn Diagrams).
* Use appropriate technology in related mathematical applications; for example, use a graphing calculator to conduct probability simulations and a spreadsheet to examine amortization schedules.

# General Education Mathematics Learning Outcomes:

Upon completion of this course, students will demonstrate the ability to:

* Use mathematics to solve problems and determine if the solutions are reasonable.
* Use mathematics to model real world behaviors and apply mathematical concepts to the solution of real-life problems.
* Make meaningful connections between mathematics and other disciplines.
* Use technology for mathematical reasoning and problem solving.
* Apply mathematical and/or basic statistical reasoning to analyze data and graphs.

## Course Requirements:

In order to accomplish the learning outcomes of this course, the learner is required to:

* Attend class lectures
* Participate in class activities
* Read and study assignments
* Solve assigned problem sets
* Complete tests, quizzes, homework, etc.
* Complete a comprehensive final exam. **If you do not take the final exam, you cannot pass.**

# Course Topics: This course consists of selected topics from Chapters 6, 7 & 8 as algebra enrichment sections plus Chapters 1, 2, 3, 10, 11, 12, and 13 in the required text, Mathematical Ideas, 13th Edition, including, but not restricted to, problem solving, set theory, logic, counting methods, probability, statistics, and financial management.

# Sections to Be Covered:

Algebra Chapters: Sections

Chapter 6: 6.2 (Examples 5, 6; Problems 11-44), 6.4 (Example 3; Problems 49-54)

Chapter 7: 7.1 (Examples 1, 4; Problems 7-26, 39-46), 7.4, 7.5, 7.6 (Examples 1, 3, 6, 7, 9; Problems 5-24, 27-36, 59-68 & additional examples and problems with a = 1)

Chapter 8: 8.2 (Examples 1, 2, 3, 5, 7; Problems 1-5, 17-48, 67-76), 8.3 (Examples 3, 4, 7 (optional); Problems 5-20, 37-58), 8.4 (Examples 1 – 4; be sure to include problems using tables)

MATH 1010 Sections (recommended by the Math Department)

Chapter: Sections

1: 1, 2, 3, 4 (#47, 49 only) 10: 1, 2, 3, 5 13: 1, 2, 4

2: 1, 2, 3, 4 11: 1, 2, 3, 5

3: 1, 2, 3, 4 12: 1, 2

# Course Evaluation and Grading:

Final Exam: The comprehensive departmental final exam accounts for 20% of the final grade. The other 80% of the final grade comes from homework, quizzes, projects, and chapter tests. The homework should not exceed 15% of the grade. The final exam is closed book and closed notes (except for allowed 8 ½” x 11” note sheet containing formulas only). Students are required to have completed the final exam as per the scheduled date/time for their respective section (see below). Unexcused absences for the final examination result in a course grade of F.

**Note:** Students are responsible for and required to bring the following materials to the final examination: (1) a TI 83 or 84 Plus graphing calculator, (2) a #2 pencil, and (3) an 8 ½ x 11 note sheet containing formulas only.

**Note**: The results of the final exam may be used by the university study as a part of the General Education assessment process. Please know that no names will appear in the study and the anonymity of all test scores is assured. Your participation in the study is voluntary, and your decision to participate or not will not affect your course grade or you’re standing with Middle Tennessee State University.

**Final Exam Time and Date: Tuesday December 6th from 10:30am-12:30pm**

The other 80% of the final grade comes from homework, quizzes, projects (individual or group), and

chapter tests. The homework and projects should not exceed 20% of the grade.

### Grade Breakdown

| **Assignment** | **Points/Percentage** |
| --- | --- |
| Homework | 15 (15%) |
| Quizzes | 10 (10%) |
| Tests | 45 (45%) |
| Project (Group) | 10 (10%) |
| Finals | 20 (20%) |
| **Total** | **100 (100%)** |

Grading Scale: A: 90-100%; B: 80-89%; C: 70-79%; D: 60-69%; F: Below 60%.

There is NO plus/minus grading in Math 1010-K. A grade of I will be given only in accordance with University policy and approval of the chair of the University Studies Department in KOM 103A.

# [Student Conduct](http://www.mtsu.edu/student-conduct/): The instructor has primary responsibility for control over all classroom behavior and can direct the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct which otherwise violates the general rules and regulations of MTSU. A cell phone policy will be at the instructor’s discretion. More information can be found through the Office of Student Conduct (at the web address: <http://www.mtsu.edu/student-conduct/>).

[Academic Integrity](https://www.mtsu.edu/provost/academic-integrity.php): Academic integrity is a hallmark of MTSU. We expect students to complete original academic exercises. Academic Integrity violations include plagiarism, cheating, fabrication, or facilitating any such act. A complete description of this code can be found at the web address: www.mtsu.edu/provost/academic-integrity.php. Taking a test/quiz ONLINE is just like taking a test/quiz in a classroom. Unless you have the approval of your professor, you may not: use your textbooks, use class notes, use additional websites, or ask anyone for help. Using any knowledge resources without the explicit approval of your professor may be considered a violation of the Academic Integrity policy. All cases of violations will be reported to the Director of Student Academic Ethics, may result in failure on the test/assignment or for the course, and the student will receive an email stating: THIS IS AN OFFICIAL CORRESPONDENCE FROM THE DIRECTOR OF ACEDEMIC INTEGRITY AT MTSU.

Drop/Withdrawal Policy: Students may not drop or withdraw from this course unless they withdraw from all University courses or obtain special permission from the chair of the University Studies Department due to extenuating circumstances. (Go to KOM 103A for information.)

Do you have a lottery scholarship?  To retain Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter.  A grade of C, D, F, FA, or I in this class may negatively impact TELS eligibility.  If you drop this class, withdraw, or stop attending this class, you may lose eligibility for your lottery scholarship, and you may not be able to regain eligibility at a later time. For additional Lottery rules, please refer to your [Lottery Statement of Understanding](https://www.mtsu.edu/financial-aid/forms/LOTFOD.pdf) form (at the web address: https://www.mtsu.edu/financial-aid/forms/LOTFOD.pdf) or contact your [MT One Stop Enrollment Counselor](http://www.mtsu.edu/one-stop/counselor.php) (at the web address: www.mtsu.edu/one-stop/counselor.php).

# Reasonable Accommodation for Students with Disabilities: **MTSU is committed to campus access in accordance with Title II of the Americans with Disabilities Act and Section 504 of the Vocational Rehabilitation Act of 1973. Any student interested in reasonable accommodations can consult the** [Disability & Access Center](http://www.mtsu.edu/dac) **(DAC) at their website** www.mtsu.edu/dac **and/or contact the DAC for assistance at 615-898-2783 or** [dacemail@mtsu.edu](mailto:dacemail@mtsu.edu)**.**

Title IX. MTSU faculty are concerned about the well-being and development of our students and are legally obligated to share reports of sexual harassment/assault, dating violence, domestic violence and stalking with the University’s Title IX coordinator to help ensure student’s safety and welfare. [MTSU’s Title IX](http://www.mtsu.edu/titleix/) website has contact information and details (web address: http://www.mtsu.edu/titleix/).