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 MyLab Math 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 students preparing to become 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: K10 TR 12:00-1:50pm
Classroom: KOM 120
Office: KOM 125A **E-mail:** thomas.torku@mtsu.edu
Office Phone: 6158985904
Office Hours: M 3:00-6:00pm, W 2:30-5:30pm, TR 2:00-4:00pm.

Text & Materials:
MyLab Math: Pearson's MyLab Math will be used in this course to complete assignments online and will be accessed through a link on the course home page in D2L (elearn.mtsu.edu). You do NOT need to purchase any book materials or access code for this course through the bookstore or elsewhere. MyLab Math includes access not only to the online assignments but also to a complete, searchable electronic textbook. However, if you would like to purchase a hardcopy of the assigned course textbook at your own expense, you will need to contact your instructor about how to do so. If you have to withdraw from the class, you must do so by January 31 to receive a refund for the MyLab Math access.
Text (is included on MyLab Math 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 the TI-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 Dept and The Mathematics Dept offer FREE math tutoring in KOM 124. It is staffed with undergraduate and graduate student tutors to support students in University Studies math courses and specific Math department courses. These math courses are prescribed math K-courses and non-K math courses: Math 1000KC, Math 1010K/1010, Math 1530K/1530, Math 1710K/1710.
Math tutoring will be offered in-person and online through Zoom. Please be prepared when using tutoring services**:** bring class notes, calculator, pencil, paper, and any material used in class.

Students are REQUIRED to check-in and check-out of the tutoring lab using your cell phone to scan a QR code.
Hours of operation for **in-person tutoring**: Mon. – Thurs. 9:00am to 6:00pm, Fri. 9:00am to 2:00pm,
Hours of operation for online **tutoring via Zoom**: Sunday 2:00pm to 5:00pm
Zoom tutoring links available on tutoring webpage: https://www.mtsu.edu/studentsuccess/tutoring.php
Students may also contact tutors via email at USmathtutoring@mtsu.edu or 615-898-2465

COVID-19 Policies. For more information, go to https://www.mtsu.edu/coronavirus/index.php.

Attendance: Attendance is required at each class meeting. 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. The instructor will keep a record of attendance for each student. [Note: Attendance and Make-up Policies will be at the instructor's discretion.] **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.**

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 Goal & Learning Outcomes:

Goal: The goal of mathematics is to expand students' understanding of mathematics beyond the entry-level requirements for college and to extend their knowledge of mathematics through relevant mathematical modeling with applications, problem solving, critical thinking skills, and the use of appropriate technologies.

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 the class.

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, 14th Edition, including, but not restricted to, problem solving, set theory, logic, counting methods, probability, statistics, and financial management.

Sections to Be Covered:

Algebra Material
Chapter 6: 6.2, 6.4
Chapter 7: 7.1, 7.4, 7.5, 7.6
Chapter 8: 8.2, 8.3, 8.4

1010 Material
Chapter 1: 1.1, 1.2, 1.3, 1.4
Chapter 2: 2.1, 2.2, 2.3, 2.4
Chapter 3: 3.1, 3.2, 3.3, 3.4
Chapter 10: 10.1, 10.2, 10.3, 10.5
Chapter 11: 11.1, 11.2, 11.3, 11.5
Chapter 12: 12.1, 12.2
Chapter 13: 13.1, 13.2, 13.4

(Instructors - Please see the "Math 1010K Topics 14th edition" document for the material to cover in each of the above sections.)

Course Evaluation and Grading:
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.

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.

Final Exam:
The final exam is a departmental, multiple choice, comprehensive examination given to all students enrolled in MATH 1010K. Students are required to have completed the final exam as per the scheduled date/time for their respective section (see below). The final exam is closed book and closed notes (except for an 8 ½" x 11" sheet allowed for notes). Unexcused absences for the final examination result in a course grade of F.

Final Exam Time and Date: Thursday, May 4 from 1:00-3:00pm

Note: Students are responsible for and required to bring the following materials to the final examination: (1) a large scantron, form no. 4521, (2) a TI-83 or 84 Plus graphing calculator, (3) a #2 pencil, and (4) an 8 ½ x 11 sheet of paper containing student preferred information.

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 your standing with Middle Tennessee State University.

The final exam review is at https://www.mtsu.edu/math/course-materials.php
Select Math 1010 and then Math 1010 Final Review Sheet.

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/).

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.)