MAT* K172   College Algebra   Fall 2016

33001 MID   MWF 8:45 – 9:45 am **E206**

INSTRUCTOR: Dr. Kelly Molkenthin (pronounced "molk-in-tine")
       Office: C 234, 860-215-9455
       Email: kmolkenthin@trcc.commnet.edu

       ****
       Office Hours: Monday 12:15 – 1:15 pm
                           Tuesday 12:30 – 1:30 pm
                           Wednesday 12:15 – 1:15 pm
                           Thursday 12:30 – 1:30 pm
       and by appointment.
       ****

REQUIRED MATERIAL:

       The text is *Precalculus, 1st Edition*. Coburn & Herdlick. McGraw Hill 2012. ISBN #9780073519531
       You can purchase a hardcover or paperback book with ALEKS 360 access code or just the electronic access kit
       (which includes ebook). You are required to purchase the access code for ***ALEKS 360***.

       Options: 1) Combo package; Includes copy of text, ALEX **360** (includes ebook). This gives
                         access for a full year to ALEKS.

             or   2) ALEKS **360** 52 wk access code (includes ebook). This gives access for a full year to
                         ALEKS.

             or   3) ALEKS **360** 18 wk access code (includes ebook). This gives access for Fall term
                         only to ALEKS.

CALCULATORS: Graphing calculators will be needed for many homework problems and it is required that you bring one
       to **every class**. Cell phones may **not** be used as calculators.

COMPUTERS: In this course, students will use an online program titled **ALEKS 360.** This program can be used
       on any computer or tablet with internet access. An access code for **ALEKS 360** is required. If you did not
       purchase a book which has an access code bundled with it, you will have to purchase an access code separately.
       One may be purchased at the TRCC bookstore or online at www.aleks.com.

       What is ALEKS?

             Assessment and **LE**arning in **K**nowledge **S**paces is a Web-based, artificially intelligent assessment and
             learning system. ALEKS uses adaptive questioning to quickly and accurately determine exactly what a
             student knows and doesn't know in a course. ALEKS then instructs the student on the topics they are
             most ready to learn. As a student works through a course, ALEKS periodically reassesses the student to
             ensure that topics learned are also retained. ALEKS courses are very complete in their topic coverage. A
             student who shows a high level of mastery of an ALEKS course will be successful in the actual course
             they are taking.

Course Code: PFH4Y-KLPJR

GRADING:

	5 Exams:	500 points (100 each)
	Final Exam:	150 points
	ALEKS:	300 points
	Attendance & Participation	50 points
	Total:	900 points

Your final grade is the total number of points you have received divided by the total possible number of points. Final grades will be determined using the scale below:

A → 93% and above   **A-** → 90 - 92%

B+ → 87 - 89%   **B** → 83 - 86%   **B-** → 80 - 82%

C+ → 77 - 79%   **C** → 73 - 76%   **C-** → 70 - 72%

D+ → 67 - 69%   **D** → 63 – 66%   **D-** → 60 – 62%

EXTRA CREDIT: There will be **no** "extra credit" assignments for this course.

EXAMS: You will have five section exams and one final exam. Exams are (tentatively) scheduled for the following dates:

♦ **Exam 1**: Wednesday, 9/21/16

♦ **Exam 2:** Wednesday, 10/19/16

♦ **Exam 3:** Wednesday, 11/2/16

♦ **Exam 4:** Wednesday, 11/30/16

♦ **Exam 5:** Wednesday, 12/16/16

♦ **Final Exam:** Wednesday, 12/21/16

This may change (but hopefully not), depending on how we are doing. Make-ups for exams will be given only in **EXTREME** circumstances (to be determined by instructor: "vacations" or dentist/doctor appointments are NOT valid reasons to miss an exam, for example) AND if arrangements are made **PRIOR** to the missed exam. Any make-up must be completed by 8:45 am prior to the next class meeting day. No exam will be administered prior to the date/time of the scheduled exam. **No calls/no shows will receive a grade of 0 (zero)** on any exam. Your final exam is a cumulative **2 hour** final exam.

ALEKS: A five hour per week minimum level of student participation is required. This will account for 75 of the 300 ALEKS grade points. The five hour participation requirement is waived on a weekly basis ONLY if all current prerequisites have been completed, as well as current topic objectives (topic objectives will be determined at the end of each class meeting). In ALEKS students are expected to complete all objectives displayed in the five objective pies. Completion of each objective pie by its specified due date is worth a total of 200 grade points. Course mastery in ALEKS is worth 25 grade points.

- ♦ Time Goal #1 – due Wednesday 9/7, 11:59 pm

- ♦ Time Goal #2 – due Wednesday 9/14, 11:59 pm

- ♦ Time Goal #3 – due Wednesday 9/21, 11:59 pm

- ♦ **Objective Pie #1: due Wednesday 9/21, 11:59 pm**

    Exam #1 – Wednesday 9/21

- ♦ Time Goal #4 – due Wednesday 9/28, 11:59 pm

- ♦ Time Goal #5 – due Wednesday 10/5, 11:59 pm

- ♦ Time Goal #6 – due Wednesday, 10/12, 11:59 pm

- ♦ Time Goal #7– due Wednesday 10/19, 11:59 pm

- ♦ **Objective Pie #2: due Wednesday 10/19, 11:59 pm**

    Exam #2 – Wednesday 10/19

- ♦ Time Goal #8 – due Wednesday 10/26, 11:59 pm

- ♦ Time Goal #9 – due Wednesday 11/2, 11:59 pm

- ♦ Time Goal #10 – due Wednesday 11/9, 11:59 pm

- ♦ **Objective Pie #3: due Wednesday 11/9, 11:59 pm**

    Exam #3 – Wednesday 11/9

- ♦ Time Goal #11 – due Wednesday 11/16, 11:59 pm

- ♦ Time Goal #12 – due Wednesday 11/23, 11:59 pm

- ♦ Time Goal #13 – due Wednesday 11/30, 11:59 pm

- ♦ **Objective Pie #4: due Wednesday 11/30, 11:59 pm**

    Exam #4 – Wednesday 11/30

- ♦ Time Goal #14 – due Wednesday 12/7, 11:59 pm

- ♦ Time Goal #15 – due Wednesday 12/14, 11:59 pm

- ♦ **Objective Pie #5: due Wednesday 12/14, 11:59 pm**

    Exam #5 – Wednesday 12/14

- ♦ Course **Mastery Pie: due Wednesday 12/21, 11:59 pm**

    Final Exam – Wednesday 12/21

ATTENDANCE & PARTICIPATION: All students start the semester will 50 "bonus" Attendance/Participation points. Points will be deducted for unexcused absences, late arrivals, early departures, cell phone, tablet or computer use during class time and other distracting classroom behavior (determined by instructor). Attendance is required and will be taken for each class.   An absence is excused ONLY for valid reasons (to be determined by the instructor) and if notification is given **PRIOR** to a missed class (via email, phone message – **not** word of mouth from another student). Oversleeping, "colds" and "vacations" are examples that are **not** valid reasons for an absence.
All absences reported by phone or reported to instructor in person **must be followed up with an email, or they will be considered unexcused. Do you best to not miss ANY classes!! Students are allowed a maximum of 2 excused absences per semester, excused absences will not affect your attendance and participation grade. Unexcused absences *will* lower your attendance and participation grade.

Also, if you miss a class it is **YOUR** responsibility to get the class notes from another student (refer to your class list) and **BE PREPARED** for the next class meeting (this includes taking a scheduled test).

Note: Class BEGINS at 8:45 am.   It is expected that you will be in your seat and ready to go at 8:45 am. Students arriving after 8:45 am will lose attendance points for that class. Excessive "lateness" will not be tolerated, it is disruptive to both the instructor and the class. Excessive lateness will result in classroom doors being locked at 8:45 am. Also, students leaving class prior to the scheduled end time will lose attendance points for that class unless arrangements have been made with the instructor prior to the class in which the student needs to leave early.

CLASS CANCELATION: In the unlikely event that a class needs to be canceled by the instructor, a notice will be placed on the classroom door prior to the start of class. If time permits, you will be notified by the instructor via email as soon as possible prior to the canceled class.

For college cancelations, pay attention to the radio & TV announcements, call the college's main phone number, 860-215-9000, or visit the college's home page, www.trcc.commnet.edu. Please: DO NOT email or call your instructor regarding school closings!

It is also suggested all students register for **The MyCommnet Alert Notification System.** This system is used to deliver important information to students, faculty, and staff regarding weather-related class cancellations. The system delivers both email messages, and text messages over cellular phones to those individuals who are registered. To register, log on to your MyCommnet account at http://my.commnet.edu/ and follow the link to MyCommnet Alert.

STUDENT EMAIL: When registering for ALEKS, please use an email you check most frequently. If the instructor needs to email the entire class, it will be done through ALEKS (which, in turn, gets automatically forwarded to the email you used to registered for ALEKS).

HOMEWORK: Keep a separate notebook for your text homework. Homework will be assigned on a regular basis. It is expected that you complete your homework by the next class meeting. BE SURE TO CHECK YOUR ANSWERS IN THE BACK OF THE TEXT. If you check the problem in the back of the text and it is not correct, re-do the problem. If you are struggling with the assignment, you need to seek out help either from your instructor or the tutor center ASAP! Our expectation is that you are spending 2-3 hours of reading and doing homework for this class for every "academic" hour we meet in class. We meet 3 "academic" hours per week, therefore you should expect to spend *at least* **6 - 9 hours per week** working on material for this class outside of our class meetings, every week!

*NOTE: Class time is reserved for presentation of material. Homework questions will be answered before or after class, or during meetings outside of class time.

RETENTION OF PAPERS: Students are expected to retain all graded work until final grades are received.

COMMUNICATION: Verbal communication with the instructor regarding missed classes, test make-ups, special accommodations, etc. **must** be followed up with an email (kmolkenthin@trcc.commnet.edu) as soon as possible. This is essential!

ACADEMIC DISHONESTY: Academic integrity is essential in all aspects of college coursework and learning. I have zero tolerance for academic dishonesty. It is expected that **YOU** complete all your assigned ALEKS work. Communication or collaboration of ANY sort is ABSOLUTEY PROHIBITED during any exam.   Academic Misconduct is punishable in a number of ways, including a score of a zero on the assignment where the cheating took place, a grade of an F in the course and/or possible censure on your permanent record. All cases of academic dishonesty will be referred to the Academic Dean. Do not let yourself come under the suspicion of academic dishonesty.

COURSE OBJECTIVES: This course is a thorough and rigorous algebra course that strengthens the proficiency with algebraic skills and the conceptual understanding needed to be successful in the Calculus sequence. The topics include: sets, polynomial, exponential, logarithmic and rational functions, rational exponents, conic sections, right triangle trigonometry, matrices, polynomial, exponential, logarithmic and radical equations, linear and quadratic inequalities, absolute value equations and inequalities, linear systems.

Upon Completion of the course, the student should be able to:

1) Define absolute value, find distances on the number line and the coordinate plane.

2) Simplify expressions with rational exponents, write them in radical form, simplify, combine and rationalize radical expressions.

3) Solver linear and quadratic inequalities, absolute value equations and inequalities, express answers in interval form.

4) Perform operations on complex numbers, conjugates, represent complex numbers graphically.

5) Perform operations on radical expressions, rational exponents, solve radical equations.

6) Find the domain and range of function's, combine functions, identify even and odd functions, graph piece-wise functions, find composition of functions, inverse and transforms of functions.

7) Find the characteristics of polynomial functions, solve polynomial equations, find zeros (roots) and x-intercepts of polynomials, apply the Fundamental Theorem of Algebra, The Remainder Theorem, The Factor Theorem, analyze end behavior.

8) Graph rational functions, find vertical, horizontal and slant asymptotes.

9) Graph exponential and logarithmic functions, use properties of exponents and logarithms, solve exponential and logarithmic equations.

10) Solve systems of linear equations in several variables

ACCOMMODATIONS: Students with learning disabilities should contact the Learning Specialist, Matt Liscum, at 860-215-9265 or via email at mliscum@trcc.commnet.edu as soon as possible to ensure timely accommodations. Students with physical disabilities should contact Elizabeth Willcox at 860-215-9289 or via email at ewillcox@trcc.commnet.edu to facilitate accommodations. All testing accommodations MUST be discussed with the instructor in a timely manner, that is, *at least* one to two class meetings **prior** to any scheduled test for which accommodations are needed.

CELL PHONE POLICY: All cell phones must be turned OFF or MUTED before entering the classroom and properly placed in a bag or pocket (not left on a desk). Any cell phone use is rude and inappropriate, and will not be tolerated. Students found using cell phones in any way in class will lose their attendance points for that class period. Cell phones may NOT be used for calculators in class. All cell phones must be completely out of sight, especially for all exams. Any visible cell phone during an exam will result in a 0 for that exam.

ACCEPTANCE POLICY: After reading this syllabus, choosing to stay registered for this course exemplifies your acceptance of the syllabus and all policies and consequences outlined in the syllabus. If you do not agree with any of the terms in the syllabus, you are free to withdraw.

The key to success in this course is to attend every class and do all the homework when it is assigned. Ask questions when you have them, either in class or in my office. You will find it much easier to learn the new topics if you consistently keep up with the course material and homework problems!

COURSE CONTENT - MAT* K172, Fall 2016   (Note: * - denotes review topics)

Chapter 1: **Relations, Functions, and Graphs**
  *1.1) Rectangular Coordinates, Graphing Circles and Other Relations
  *1.2) Linear Equations and Rates of Change
  *1.3) Functions, Function Notation, and the Graph of a Function
  *1.4) Linear Functions, Special Forms, and More of Rates of Change
  1.5) Solving Equations and Inequalities Graphically; Formulas
  1.6) Linear Function Models and Real Data

Chapter 2: **More on Functions**
  2.1) Analyzing the Graph of a Function
  2.2) The Toolbox Functions and Transformations
  2.3) Absolute Value Functions, Equations, and Inequalities
  2.4) Basic Rational Functions and Power Functions
  2.5) Piecewise-Defined Functions
  2.6) Variation: The Toolbox Functions in Action
  *Appendix A 5-E) Solving Rational Equations
  *Appendix A 6-F) Solving Radical Equations

Chapter 3: **Quadratic Functions and Operations on Functions**
  *3.1) Complex Numbers
  *3.2) Solving Quadratic Equations and Inequalities
  3.3) Quadratic Functions and Applications
  3.4) Quadratic Models: More on Rates of Change
  3.5) The Algebra of Functions
  3.6) The Composition of Functions

Chapter 4: **Polynomial and Rational Functions**
  4.1) Synthetic Division: the Remainder and Factor Theorems
  4.2) The Zeros of Polynomial Functions
  4.3) Graphing Polynomial Functions
  4.4) Graphing Rational Functions
  4.5) Additional Insights to Rational Functions
  4.6) Polynomial and Rational Inequalities

Chapter 5: **Exponential and Logarithmic Functions**
  5.1) One-to-One and Inverse Functions
  5.2) Exponential Functions
  5.3) Logarithms and Logarithmic Functions
  5.4) Properties of Logarithms
  5.5) Solving Exponential and Logarithmic Equations
  5.6) Applications from Business, Finance, and Science
  5.7) Exponential, Logarithmic, and Logistic Equation Models

Chapter 9: **Systems of Equations and Inequalities**
  9.1) Linear Systems in Two Variables with Applications
  9.2) Linear Systems in Three Variables with Applications