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This course syllabus is intended as a set of guidelines for MATH 1314. Both North Lake College and your instructor reserve the right to make modifications in content, schedule, and requirements as necessary to promote the best education possible within the prevailing conditions affecting this course.

Instructor Information
Instructor’s Name: Nahid Pope
Email Address: npope@dcccd.edu
Office Phone Number: 972-860-3940
Office Location: K303-B
Office Hours: MW, 9:00 to 10:30 AM & TR, 9:30 to 10:30 AM

Course Information (Department Syllabus)
Course title: College Algebra
Course number: MATH 1314
Section number: 73431
Credit hours: 3

District Course description:
This course is an in-depth study and applications of polynomial, rational, radical, exponential, logarithmic, absolute-values and piecewise-defined functions, and systems of equations using matrices. Also covered are the graphing calculator, non-linear inequalities, sequences and series, circles, the Binomial Theorem and a review of the classification of the real number systems.

ACGM description: In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included.
Course prerequisites: DMAT-0093 or DMAT-0310 (Intermediate Algebra) or equivalent with an A, B, or C, or an appropriate score on a mathematics placement test.

DCCCD Distance Education Courses: This course is presented through a web-based interactive, multimedia format using MyLabsPlus and can be completed on either a PC or MAC computer. Students use Internet access to participate in classroom studies and to ask questions. There is not a particular time of the day when the class meets. One of the advantages of taking a course in this medium is the flexibility of when students choose to complete the work. For those students who live close to North Lake College, the Math/Science Center is available six days a week for extra one-on-one help with homework.

Required Textbook and Materials

1) **College Algebra MLP Package for North Lake College**
   Includes Access to MyLabsPlus and College Algebra Text, 4th ed, by Beecher & Penna
   - Note: MyLabPlus access code is **NOT** the same as the MyMathLab access code.
   - The MyLabsPlus is accessed with the MyMathLab – **Plus** access code.
   - Student ID number and email address listed in eConnect will be uploaded into the
     MyLabsPlus software to provide the student access to the course materials. You can modify
     your email address and password once you have logged into the software the first time. If
     you have questions or concerns contact the math division office at 7mathofc@dcccd.edu

2) **Calculators**
   You will be allowed to use calculators on all tests. Graphing calculators (such as the
   TI-83 or TI-84 Plus) are recommended. **Calculators such as the TI 89 & TI
   92, which perform algebraic operations, are not allowed.** You may check out a
   TI-84 calculator for the midterm and final at North Lake College. Please verify
   the calculator policy for other campuses by calling the appropriate testing center.

3) **Headphones** – very beneficial to have during class

Technical Support for eCampus and MyLabsPlus
- MyLabsPlus support website:  http://www.mylabsplus.com/support
- A link to this site is available in your course on eCampus.
- Technical support number for eCampus:  972-669-6402
- Technical support number for MyLabsPlus:  1-888-883-1299

Course Objectives
To develop a further understanding of the process of learning mathematics, the factors which can interfere with learning, and to continue to build the algebraic skills necessary for future courses or
for utilization in a career or other endeavor.

_The objective_ of the mathematics component of the core curriculum is to develop a quantitatively literate college graduate. Every college graduate should be able to apply basic mathematical tools in the solution of real-world problems.

**Course Outline**
Please see *Appendix i* attached to this syllabus for a detailed course outline.

**Evaluation Procedures**
The course learning outcomes will be assessed through Group Work (projects), Homework, Daily work (includes mastery tests, SLO activities, quizzes and other activities), Quizzes and Exams. The final grade will be based on the following:

**Computing Your Grade:**
- Written Chapter tests 30%
- Daily work 15% Includes homework, quizzes, focus pages, and Mastery Tests, and SLO activities
- Midterm Exam 30%
- Final Exam 25%

**FORMULA:**
Daily Work Average*0.15 + (Total of 5 Written Chapter Tests/5 *0.30 + Midterm*0.30 + Final Exam * 0.25 = Course Grade

See eCampus under “Course Info and Grading” for a sample calculation.

The Gradebook listed under "Tools" on eCampus will show you your exam grades and the class average for that exam. Averages are interpreted as follows:

**Grading Scale**
Your course grade will be determined by the final grade average based on the following:
- A = 90 – 100
- B = 80 – 89
- C = 70 – 79
- D = 67 – 69
- F = 0 – 66

**Homework**
Homework is the most important learning tool in a course.

- It reinforces instruction.
- It provides an immediate and personal measure of your competence in the course.
- Homework will be assigned for each objective from MyLabsPlus.
- **All work must be written neatly on paper and the answer submitted online.**
- You must earn at least a 70% on each homework assignment before moving onto the next objective. Students that continue to work and earn 90 – 100% on the homework statistically do better on the written tests.
Students will be required to include certain homework problems with each written chapter test.

The homework must be organized in the following manner:
1. Put the chapter, section, and objective at the top of EVERY PAGE, not just the page where the section begins.
2. Start new sections on a new page or highlight the start point with a marker.
3. Express the answer to stated problems (word problems) in a sentence which identifies what you have determined to be the answer.
   - An important part of mathematical literacy is good communication skills.
   - First: write the problem or the essential facts
   - Second: present mathematical sentences showing the progression of your ideas and
   - Third: present a conclusion.

More details about what is expected on homework assignments can be found in the appendix.

Go to the eCampus classroom for the following documents:
1) Guidelines for Homework Assignments and All Tests and
2) Chapter Summary

### Time Requirements:
- You can expect to spend a **minimum of 12 hours per week** on this class.
- The 12 hours = 3 hours of “class time” (reviewing media assignments) + at least 9 additional hours working on homework assignments and projects
- **Often online courses take even more time to work through the material.**
- **If you cannot donate this amount of time to math homework, your success will be diminished.**

### Project/Learning Activities
- Periodically you will be expected to complete a project and/or additional assignments.
- If you are absent on the day these assignments are given, it is your responsibility to get the information from eCampus and turn it in to your instructor on the next class day.
- A late penalty may apply.

### Tests
**Types of tests:** mastery tests and written chapter tests.

**Mastery Tests:**
- Mastery tests will be taken using MyLabsPlus.
- The mastery test will help determine your readiness to take the written chapter test.
- Mastery test criteria:
  1) If your score is \( \geq 70\% \), you will be able to take the written chapter test.
  2) If your score is below a 70%, you will need to discuss with your instructor the best course of action to help you be more successful in learning the material. Do not retake the mastery test until you contact your instructor.
Written Chapter Tests:
• All written chapter tests have been uploaded into the eCampus classroom. There are five written chapter tests.
• After you have completed all of the objectives with corresponding homework (minimum score of 80% on each assignment) and discussed the mastery test with your instructor, you are ready for the written chapter test. Contact your instructor via email and request the test password.
• Once you have the password,
  1. Go into the eCampus classroom and click on the appropriate unit.
  2. Print the exam and complete the test according to the “Guidelines for Homework Assignments and Tests”. **To earn full credit you MUST use proper notation.**
  3. Mail the exam back to your instructor with a self-addressed stamped envelope enclosed so that your exam may be returned after it has been graded.
  4. Due to the number of pages, the required postage is usually at least two stamps. It is your responsibility to make sure you use the correct amount of postage.
• You have 48 hours to mail in the exam after the password has been given. An exam cover sheet must also be included with the test (the cover sheet is also available on eCampus).
• Any tests that have been mailed after the deadline will be considered late and will count as a retake.
• **A maximum of ONE test may be taken PER WEEK.**
• **You will not be allowed under any circumstances to complete several written chapter tests within a short period of time especially at the end of the semester so plan your schedule accordingly.**
• Retests are available on all exams except the final. You are allowed only one retest per exam.
• The maximum grade for re-tests will be a 75%.
• All written chapter tests will be graded according to the Guidelines for Homework Assignments and All Tests (see Appendix). **Proper notation REQUIRED.**
• You are required to use proper algebraic techniques on each test. Improper algebraic steps may result in a loss of all or partial points.
• Answers only will receive little, if any credit.

Special note on written tests:
• All written chapter tests will be based on homework problems that are assigned throughout the semester.
• All chapter tests will test your understanding of the course concepts that are covered throughout the semester and through various forms of questioning and application problems. **This means the exams are not identical to problems you have worked but designed to test your understanding of the concepts presented.**

**Proctored Tests – Midterm and Final Exam**
• You must contact the instructor via email at least two weeks before you are ready to take either the midterm or final exam so that it can be sent to the appropriate test center. Exams are only sent out on Tuesdays.
• The midterm exam is comprehensive and will be given after Chapter 3 (Test 3).
• The final exam is comprehensive i.e. it covers the entire course. It will be given after the Chapter 8 Mastery test is completed.
• For the final exam, students must adhere to the test schedule given in the course calendar. A student may take the final exam early ~ contact your instructor.

**You may not take the final exam until all written chapter tests have been taken, received AND graded by the instructor.**

• The midterm and the final must be taken at a DCCC College or in a supervised testing situation at a testing site mutually agreed upon. Students must notify the instructor as to which college is best for testing by filling out the student profile form.
• Students who live out of the Dallas area may arrange for a proctor using the proctor nomination form in the Dallas TeleCollege. No proctored tests will be sent to a location in Dallas County other than a DCCC campus test center unless accommodation is being made through Disability Services. There is a link to the proctor nomination form in the "External Links" area of the eCampus classroom.

**Extra Credit**
There is an extra credit test/quiz in eCampus under "Assignments". It covers information contained in the Syllabus and on the First Day Handout. It should be taken within the first week of class after you have read ALL the information contained in both documents. Any extra credit earned during the semester will count in the written chapter test point total and be included in that portion of the grade unless specifically noted otherwise.

**You will not be allowed under any circumstances to take more than 1 test during the last week of the semester.**

**Taking Tests in the Testing Center (A 425)**
• **Important:** Government- or school-issued photo identification is required & enforced.
• You may not bring personal items into the Test Center. This includes bags, cell phones and pagers. Coin-reimbursable (quarter) lockers are available for student use. **Please do not share lockers.**
• Please show courteous and cooperative behavior while using the services provided by the Testing Center.
• **Do not bring children to the testing center.** You must make arrangements for the care of your children prior to your exam date. The police department will be notified of any unattended children.
• **Do not** take any testing materials with you when you leave the Testing Center. This includes the test, answers, charts, scratch paper. These items will be attached to your test.

**Academic Dishonesty**
The Dallas County Community District has established procedures and guidelines to protect the security and integrity of all exams. All incidents of academic dishonesty are documented and reported to the instructor, the Director of Testing and the Dean of
Student Enrollment.

- **Hours of Operation:**
  - **Monday – Thursday:** 8:30 a.m. – 8:00 p.m.
  - No tests will be issued after 7:00 p.m. Other cut-off times may be in effect for specific exams by the instructor's direction. All exams collected at 8:00 p.m.
  - **Friday - Saturday:** 8:30 a.m. – 3:30 p.m.
  - Other cut-off times may be in effect for specific exams by the instructor's direction. No tests will be issued after 2:30 p.m. All exams collected at 3:30 p.m.
  - **Sunday:** CLOSED

- If your instructor requires you to complete an exam in the Testing Center, be sure to have the following information when you request your test:
  1) Instructor’s name
  2) Subject and course number…**MATH 1314 INET or online**
  3) Exam – midterm or final exam
  4) Exam deadline (Get this information from your instructor. The testing staff cannot “look up” this information on computers.)

- You should also bring the following supplies:
  1) Pencil & Eraser
  2) Only battery operated 4 function, non programmable scientific or TI83/TI84 calculators are allowed (if permitted by instructor).
  3) Money for coin-return lockers (**quarter**). Please do not share lockers.

- **Questions?** Please visit the Testing Center (A425) or call 972-273-3160.

**End of Course Grade Options**

1. **Student receives an A, B, or C average.**
   - Receiving an A, B or C grade is considered successful completion of the College Algebra course.

2. **Student receives a W.**
   - Students who decide that they will be unable to complete the course and withdraw on or before the drop date will receive a W. Students repeating the course in a subsequent semester will have to pay tuition again and may have to purchase a new set of materials to obtain the required software license (MyLabsPlus code is good for one year if used with the same text).

3. **Student receives an Incomplete (I).**
   - A student who has completed all work but the last unit test and final exam successfully in accordance with the Course Calendar AND/OR HAS MEDICAL ISSUES OR OTHER EXTREME CIRCUMSTANCES may be eligible for an Incomplete grade.
   - Only students who have worked consistently and regularly throughout the semester may qualify for an Incomplete.
• The student needs to make individual arrangements with the instructor for plans to finish the course.
• A contract for the Incomplete must be included with the instructor's final grades.
• Incomplete contracts must be approved by the last week of the term and may be accepted via email.
• The contract includes a deadline for completion, agreed upon work to be finished and a grade alternative if the contract is not fulfilled.
• The student does not have to re-enroll in the course, nor buy new materials.

4. **Student receives a WX grade.**
   • Allows the student to re-enroll in MATH 1314 INET (online) and begin with chapter four.
   • All work for chapters one through three will be saved and transferred to the new MATH 1314 class.
   • A student who has been attending class regularly (as determined by regular weekly activity in the software) and taking tests regularly (not all bunched together) **may be eligible** for a WX grade if the first three tests and the midterm are completed with a 70% average or better.
   • Students who receive a WX grade must sign a contract that states what assignments are to be finished and must agree to sign up for the same online course the next semester to complete the course work.
   • The contract must be approved by the last week of the term and submitted with the final grades. Student’s acceptance of the contract may be completed by email.
   • **The student will have to pay for the course tuition again but will not have to purchase a new code** (providing the next semester ends within the one year time frame allowed by the program).
   • The WX grade will only be considered and discussed on an individual basis.

5. **Student receives a D or an F.**
   Students who do not drop the course must be given a completion grade. Those that do not qualify for one of the options listed above will be given the Course Grade they have earned as determined by the course average process listed in the previous section.

*The instructor will use the same grading policy for all students.

**Discipline/ Course/ Department/Policies**

**Sending Emails**
Be sure to put "MATH 1314-section, Last Name" in the subject line for all emails you send. There are several internet classes going on at the same time. By doing this you will be saving yourself and the instructor a lot of time. Also, please include your first and last name in the message of the email.

**Attendance**
Attendance is an important part of your success. Attendance will be marked each week by recording the time spent in the instructional classroom. Additional time off line, doing assigned homework and taking exams is also expected.
The Math Learning Center (C-211)
The Math Learning Center (C-211) provides generalized instructional services for students enrolled in North Lake MATH and DMAT courses. Students must show a North Lake College I.D. These include:

- **Free Tutoring** in all math courses taught at North Lake College;
- Computers that may be used by students enrolled in courses that have an Internet component such as homework systems (MyLabsPlus, ConnectMath). This lab is restricted to students working on MATH or DMAT courses;
- Graphing calculators and textbooks that are available for use in center;
- Graph Stamps so students can make their own graph paper; and
- A quiet area to study.

The Math Learning Center Hours (C211)
Monday through Thursday: 8:00 a.m. – 9:00 p.m.
Friday & Saturday: 9:00 a.m. – 2:00 p.m.

The Math Success Center (C207)
Provides intensive assistance to students enrolled in developmental (credit or CE) mathematics courses or College Algebra (MATH 1314/1414) at North Lake College. Students must show a North Lake College I.D.:

- This Center provides and promotes activities that are connected with success in mathematics.
- **Students can make up class absences.**
- They can learn how to study math and manage their time;
- Receive specialized tutoring from seasoned faculty;
- Learn how math relates to their lives; and
- Experience the benefits of working with a study group.

The Math Success Center Hours (C207) (subject to revision)
Monday through Thursday: 9:30 a.m.—7:00 p.m.
Friday & Saturday: 9:00 a.m.—2:00 p.m.

Institutional Policies

Academic Dishonesty
The Student Code of Conduct prohibits academic dishonesty and prescribes penalties for violations. According to this code, which is printed in the college catalog, "academic dishonesty", includes (but is not limited to) cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion".

1) The Vice-President of Academic & Student Affairs may initiate disciplinary proceedings against a student accused of academic dishonesty.
2) Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion.
3) Cheating on a test includes:
   a) Copying from another student’s test paper;
b) Using, during a test, materials not authorized by the person giving the test;

c) Collaborating with another student during a test without permission to do so;

d) Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an un-administered test.

e) Substituting for another student, or permitting another student to substitute for you to take a test; and

f) Bribing another person to obtain an unadministered test or information about an unadministered test.

4) “Plagiarism” means the appropriation of another’s work (ideas and/or words) and the unacknowledged incorporation of that work in one’s written work offered for credit. Quotes not identified as quotes constitute a form of plagiarism even if the borrowed ideas are documented.

5) “Collusion” means an unauthorized collaboration with another person in preparing written work offered for credit.

**PENALTY for Academic Dishonesty** Academic dishonesty may result in the following sanctions, including, but not limited to:

1. A grade of zero or a lowered grade on the assignment or course.

2. A reprimand.

3. Suspension from the college.

**Notifications of Absence Due to Religious Holy Day(s)**

Students who will be absent from class for the observance of a religious holiday must notify the instructor in advance. Please refer to the Student Obligations section of the college catalog for more explanation. You are required to complete any assignments or take any examinations missed as a result of the absence within the time frame specified by your instructor.

**Requirements of the American with Disabilities Act (A430)**

North Lake College provides academic accommodations to students with disabilities, as defined under ADA law. It is the student's choice and responsibility to initiate any request for accommodations. If you are a student with a disability who requires such ADA accommodations, please contact North Lake College's Disability Services Office in person (A430) or by phone at 972-273-3165. See [http://www.northlakecollege.edu/resources/disability.html](http://www.northlakecollege.edu/resources/disability.html)

**Administrative Withdrawal**

Students with valid extenuating circumstances may be eligible for an administrative withdrawal by the Dean of the Division in which the course or courses are taught. An administrative withdrawal will not be awarded to students who simply fail to withdraw prior to the last day to receive a “W.” The request for an administrative withdrawal must be made in writing to the Dean of the Division with any supporting documentation attached. This must occur before the last official day of the semester.

**Drop Policy**

If you are unable to complete this course, you must officially withdraw by **Thursday, April 16th, 2015**. Withdrawing is a formal procedure which you must initiate; your instructor cannot do it for you. All Dallas County Community Colleges charge a higher tuition rate to students
registering the third time for a course. This rule applies to the majority of credit and Continuing Education / Workforce Training courses. Developmental Studies and some other courses are not charged a higher tuition rate. Third attempts include courses taken at any DCCCD college since the fall 2002 semester. For further information, go online to: http://www.DCCCD.edu/thirdcourseattempt.

STOP BEFORE YOU DROP-Do NOT drop until you speak with your instructor.
For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: https://www1.dcccd.edu/coursedrops

Financial Aid Statement
Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate are also subject to this policy.

To apply for financial aid in the DCCCD, students must complete FAFSA (Free Application for Federal Student Aid) on the web at: http://www.fafsa.ed.gov

Counseling Services (A430)
Counseling services for personal issues are provided to all students currently enrolled at North Lake College. These services are provided by licensed professionals who are bound by confidentiality (within ethical parameters) at no charge. With the assistance of a counselor, students are able to identify, understand, resolve issues and develop appropriate skills. To make an appointment call 972-273-3333 or visit A 430.

The Academic Skills Center (A332)
The Academic Skills Center (ASC) is designed to provide assistance to students in the following areas:

- Labs for students enrolled in foreign language, Developmental Reading, and ESOL courses. One-on-one tutoring is available.
- The Writing Center can help students clarify writing tasks, understand instructors’ requirements, develop and organize papers, explore revision options, detect grammar and punctuation errors, and properly use and document sources. Rather than merely editing or "fixing" papers, tutors focus on helping students develop and improve their writing skills.
- The Online Writing Lab (OWL) allows students to submit papers to our writing tutors electronically and get feedback within 24-72 hours. The OWL can be accessed through eCampus. After logging on to eCampus, click on the Community Tab at the top. Type “Owl” in the search field and click “Go.” Next, click on the double drop-down arrows
next to “NLC-OWL2,” and then click on “Enroll.” Once enrolled, students can receive services from the OWL.

For more information or to schedule a tutoring appointment, come by A-332 or call 972-273-3089.

**TSI Information**

TSI (Texas Success Initiative) is the state required assessment program that has replaced TASP. The purpose of TSI is to insure students have the skills to be ready for college level coursework. Dallas County Community College District is allowing students to decide when they will take their developmental coursework. Demonstrated proficiency in skills through completion of DMAT 0093 or a passing score on an assessment instrument is required to move to college level math classes. Students must earn an “A”, “B”, or “C” in their developmental class in order to move to the next developmental level or to a college level class.

Effective for Fall Semester 2005, the Dallas County Community Colleges will charge a higher tuition rate to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and Continuing Education/Workforce Training courses will result in higher tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 semester.

Enrollment in developmental courses is subject to other limitations. Students may enroll in a maximum of 27 hours of developmental courses.

For more information go to the DCCCD web site and click on “Paying for College” and then “Third Course Attempt.”

TSI completion of all areas (reading, math, and writing) is required before being awarded a degree. Based on the first testing score, some students may need to re-test in order to complete TSI requirements.

**Food and Drink in the Classroom**

The college policy restricts food and drink in the classroom.

**APPENDIX**

Go to the eCampus classroom for the following documents:

1) Guidelines for Homework Assignments and All Tests – printer friendly version
2) Chapter Summary – printer friendly version
3) Course calendar – printer friendly version posted
# Appendix i

## MATH 1314 Topics to be covered

### Chapter 1: Graphs, Functions, and Models

Section 1 is mostly prerequisite material that should be reviewed. In Section 1 we learn to relate equations to their graphs. Circles are covered in Chapter 4.

#### Section 1.1: Introduction to Graphing

**Do the following:**

- Graphs of Equations
  
  Examples 4, 5

**Students should know how to use a t-chart to graph basic library of functions.**

#### Section 1.2: Functions and Graphs

**Examples 1, 3, 4, 5, 8, 9**

- Determine whether a correspondence or a relation is a function
- Find function values, or outputs, using a formula or a graph
- Graph functions
- Determine whether a graph is that of a function
- Find the domain and the range of a function

#### Section 1.3: Linear functions, Slope, and Applications

**Examples 1, 2, 3, 6, 7, 9**

- Solve applied problems involving slope,
- Find the slope and the y-intercept of a line given the equation \( y = mx + b \) or \( f(x) = mx + b \)
- Solve applied problems involving linear functions

#### Section 1.4: Equations of Lines and Modeling

**Examples 1, 2, 3, 4, 5**

- Determine equations of lines
- Given the equations of two lines, determine whether their graphs are parallel or perpendicular

#### Section 1.5: Linear Equations, Functions, Zeros, and Applications

**Examples 5, 8, 10, 11**

- Linear equations: Examples 1-4 are review for students who need it.
- Solve applied problems using linear models
- Find zeros of linear functions
  
  Important concept: the connection between zeros, intercepts, and solutions.

#### Section 1.6: Solving Linear Inequalities

**Examples 1-4**

- Solve linear inequalities
- Solve compound inequalities

  Recap the meaning of AND / OR. See the Powerpoint in eCampus – Lesson Unit 1.

- Solve applied problems using inequalities

### Chapter 2: More on Functions
### Section 2.1: Increasing, Decreasing, and Piecewise Functions; Applications
Examples 1, 2, 4, 6, 7, Postage stamp function (assume each oz. is 49 cents)
- Graph functions, looking for intervals on which the function is increasing, decreasing, or constant, and estimate relative maxima and minima
- Given an application, find a function that models the application. Find the domain of the function and function values
- Graph functions defined piecewise- simple graphs with two linear functions will be tested
- **Learning Activity:** Water Bill Project or Tax Table ~ optional

### Section 2.2: The Algebra of Function
Examples 1, 2
- Find the sum, the difference, the product, and the quotient of two functions, and determine the domains of the resulting functions

### Section 2.3: The Composition of Functions
Examples 1-3
- Find the composition of two functions and the domain of the composition

### Section 2.4: Symmetry and Transformations
Examples 1, 2, 4, 5
- Determine whether a graph is symmetric with respect to the x-axis, y-axis, and the origin
- Review the definition of even and odd functions. These two terms (even and odd) were introduced sometimes in the last few decades to refer to functions that are symmetrical to the y axis (even) and symmetrical to the origin (odd). They appear to be defined at the beginning of upper level texts and never used.
- Given the graph of a function, graph its transformation under translations, and reflections.

### Section 2.5: Variation and Applications
Examples 1-7
- Find equations of direct variation, inverse variation, and combined variation given values of the variables
- Solve applied problems involving variation

### Chapter 3: Quadratic Functions and Equations; Inequalities

#### Section 3.1: The Complex Numbers
Examples 1-3, 5, 6, i raised to the 1st, 2nd, 3rd, and 4th powers,
- Perform computations involving complex numbers
  *Powers of i greater than four will not be covered*

#### Section 3.2: Quadratic Equations, Functions, Zeros, and Models
Examples 1-3, 4, 6, 8, 9
- Find zeros of quadratic functions and solve quadratic equations by using the principle of zero products, by using the principle of square roots, by completing the square, and by using the quadratic formula.
  *Completing the Square will be used on quadratic equations with a leading coefficient of 1. All quadratic equations can be solved by the Quadratic Formula. If a quadratic expression is factorable, the factors can be found by setting it equal to 0 and using the quadratic formula.*
- Solve applied problems using quadratic equations

#### Section 3.3: Analyzing Graphs of Quadratic Functions
Example 4, 5, 6
The zeros for quadratic function are given by \( x = \frac{-b}{2a} \pm \frac{\sqrt{b^2 - 4ac}}{2a} \). The point half-way between the zeros has the x coordinate of \( \frac{-b}{2a} \). That is also the x coordinate of the vertex. The y coordinate of the vertex is \( f \left( \frac{-b}{2a} \right) \). The vertex can be found without completing the square.

- Find the vertex, the axis of symmetry, and the maximum or minimum value of a quadratic function. Use the method outlined above.
- Graph quadratic functions
- Solve applied problems involving maximum and minimum function values

Section 3.4: Solving Rational Equations and Radical Equations
Examples 1-5
- Solve rational equations
- Solve radical equations - Focus on equations with one radical.

Section 3.5: Solving Equations and Inequalities with Absolute Value
Examples 1-4
- Solve equations with absolute value
- Solve inequalities with absolute value. No rational expressions are used.

Chapter 4: Polynomial Functions and Rational Functions

Section 4.1: Polynomial Functions and Models
Examples 1-5
You already know that \( y = ax^2 + bx + c \) opens up for \( a > 0 \) and down for \( a < 0 \). The end behavior of any polynomial function \( y = a_n x^n + a_{n-1} x^{n-1} + \ldots + a_0 \) can be determined by substituting large positive or negative values for \( x \) in the leading term. If substituting a large negative value for \( x \) in the leading term yields a negative number then the graph begins in the 3rd quadrant. If it yields a positive number then the graph starts in the 2nd quadrant. Substituting large positive values of \( x \) in the leading term will, in a similar manner, tell you whether the graph's right end behavior is in the 1st or 4th quadrant.
- Determine the behavior of the graph of a polynomial function using the leading-term test or the method described above.
- Factor polynomial functions and find their zeros and their multiplicities (Test questions will give polynomial functions in factored form.)
- Solve applied problems using polynomial models

- Section 4.2: Graphing Polynomial Functions
Examples 1, 3
- Graph polynomial functions. Practice graphing by hand. Check using the graphing calculator.
- Graphing circles. See handout.
- Consider characteristics of the graphs of equations and functions. See handout.

Section 4.3: Polynomial Division; The Factor Theorem
Examples 1, 2, do the Factor Theorem and "Connecting the concepts" p325
- Perform long division with polynomials and determine whether one polynomial is a factor of another
- Use synthetic division to divide a polynomial by \( x - c \)
- Use the Factor Theorem to determine whether \( x - c \) is a factor of \( f(x) \)

Section 4.4: Theorems about Zeros of Polynomial Functions....
Examples 1, 2, 3, 4
- Find a polynomial with specified zeros
- For a polynomial function with integer coefficients, find the rational zeros and the other zeros, if possible

**Section 4.5: Rational Functions**  
**Examples 1-6**  
- For a rational function, find the domain and graph the function, identify any horizontal or vertical asymptotes

**Section 4.6: Polynomial Inequalities and Rational Inequalities**  
**OMIT**

**Chapter 5: Exponential Functions and Logarithmic Functions**

**Section 5.1: Inverse Functions**  
**Examples 1-7, 9**  
- Determine whether a function is one-to-one, and if it is, find a formula for its inverse  
  *For determining if a function is one-to-one, focus on the horizontal line test and composition of two functions rather than using the definition/proof.*

**Section 5.2: Exponential Functions and Graphs**  
**Examples 1-6**  
- Graph exponential equations and exponential functions  
- Solve applied problems involving exponential functions and their graphs  
  *Stress applications.*

**Section 5.3: Logarithmic Functions and Graphs**  
**Examples 1-6, 9, 10, 13**  
- Find common logarithms and natural logarithms with and without a calculator  
- Convert between exponential equations and logarithmic equations  
- Graph logarithmic functions  
- Solve applied problems involving logarithmic functions

**Section 5.4: Properties of Logarithmic Functions**  
**Examples 1-5, 6 (a), 7, 8, 10**  
- Convert from logarithms of products, powers, and quotients to expressions in terms of individual logarithms, and conversely  
- Simplify expressions of the type \( \log_a a^x \).

**Section 5.5: Solving Exponential Equations and Logarithmic Equations**  
**Examples 1-4, 6, 7, 9**  
- Solve exponential equations  
- Solve logarithmic equations

**Section 5.6: Applications and Models: Growth and Decay; Compound Interest**  
**Examples 1-3, 5**  
- Solve applied problems involving exponential growth and decay  
- Solve applied problems involving compound interest

**Chapter 6: Systems of Equations and Matrices**

**Section 6.1** Omit (Review)  
**Section 6.2** Systems of Equations in Three Variables
Example 1 Set up and solve using technology or by hand. Do problems 3 & 5 as a group activity to hand in--use technology or do by hand.

Section 6.3–6.8 OMIT

**Chapter 8: Sequences, Series, and Combinatorics**

**Section 8.1: Sequences and Series**

Examples 1, 4

- Find terms of sequences given the nth term
- Convert between sigma notation and other notation for a series

A handout will be provided to extend these concepts to arithmetic and geometric sequences and series.

Sections 8.2-8.6 Omit

**Section 8.7: Binomial Theorem**

Group activity – Example 1: explore patterns generated on p 676 and 677

Go to next page
Appendix ii
MATH 1314 Weekly Course Calendar – Spring 2015
INET – online classes

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 20</td>
<td>Classes Begin</td>
</tr>
<tr>
<td>February 2</td>
<td>12th day of class</td>
</tr>
<tr>
<td>February 19 &amp; 20</td>
<td>Conference Days – day and evening classes will not meet</td>
</tr>
<tr>
<td></td>
<td>(Friday evening, Saturday and Sunday classes will meet.)</td>
</tr>
<tr>
<td>March 9 – 13</td>
<td>Spring Break – campus closed</td>
</tr>
<tr>
<td>April 3rd</td>
<td>Holiday – campus closed</td>
</tr>
<tr>
<td>April 16</td>
<td><strong>Drop Date – last day to drop with a grade of W</strong></td>
</tr>
<tr>
<td>May 4th</td>
<td>Only one chapter test allowed after this date</td>
</tr>
<tr>
<td>May 9th</td>
<td>Last Day to take Final Exam at any NON-North Lake Main Campus</td>
</tr>
<tr>
<td></td>
<td>Testing site – note: not all testing centers are open on Sat.</td>
</tr>
</tbody>
</table>

**The following timeline is for Math 1314 73431**

- The dates listed below are the due dates for this course.
- The post-mark on the test will be the date used to determine if a test was taken on time, not the date of receipt by the instructor.
- Students are strongly encouraged to finish early and may take tests as quickly as they are able to complete the required material.
- All exams may be taken on or before the due date without any penalty.
- Contact your instructor for the password when you are ready for a test.
- **Once the password has been given, students have 48 hours to mail in the completed test along with a self-addressed stamped envelope.**
- A late penalty will apply for tests taken after the due date. See syllabus, page 6.
- It takes at least 2 stamps to return most tests.
- **After May 4th the instructor will only grade one take home test and the final exam for each student.**
- Multiple exams will not be accepted after the May 4th deadline.

**Facts that help students be successful in this course:**

1. Students that take the focus pages seriously do better on the midterm and final exams. STEM students will want to carefully review the focus pages to help them be prepared for Trig.
2. Show all your work on your homework! You will be required to turn in certain sections.
3. The Mastery Tests are designed to help you study for the written test.
   If you have to look up something to work the mastery test, plan to memorize that info! No peaks should happen on the written tests and no peaks will happen on the midterm or final!
4. The midterm is 30% of your grade! Be prepared.
5. The final exam is 25% of your grade! Be prepared.
## MATH 1314 Weekly Course Calendar – Spring 2015 INET

### Week 1
1-20-15

**In class activities:**
- Discuss syllabus – highlights – go to eCampus to read details
- "Are you ready for college algebra?" – in class diagnostic
- eCampus –
  1) Highlights of new eCampus classroom
  2) Chapter Summary – note: **NO Pre-tests**
  3) How to Log into MyLabsPlus ppt (MLP)
- MyLabsPlus - Logging in

**Homework for week 1:**
- Enter eCampus and complete the following:
  1) Getting Prepared for the Course
  2) Orientation to Course & MyLabsPlus
  3) Assignments for Week 1 – posted

**Students, save yourself a lot of frustration and carefully work through the above three assignments.**
- Log into MyLabsPlus and complete the following:
  1) **RUN the Browser Check!** Located in the MLP homework assignments
  2) If new to MLP, preview “How to Enter Answers” located on Announcements pg.

### Week 2
1-26-15

- Section 1.1 + Sec 1.2 + Sec 1.3 (MLP)
- SLO 1 Activity – located in eCampus  – **Required to turn in.**
  Activity: Finding the Domain and Range of a Square root fxn.
- **Handout:** Calculator Tips (eCampus ~ Lesson Unit 1)
- **Supplement:** Power point for Average Rate of Change (eCampus-Lesson Unit 1)

### Week 3
2-02-15

- Section 1.4, Sec 1.5 + Sec 1.6 (MLP)
- **Supplement:** Domains ~ Introduction
- **Supplement:** AND/OR ppt (eCampus -Lesson Unit 1)
- Mastery Test: Chapter 1 (MLP) - Required
- **Written Test:** Chapter 1 – take next week.
- Slo 1 Quiz in MLP – ask instructor for password

### Week 4
2-09-15

- Section 2.1 (MLP)
- **Supplement:** Graphing Piecewise functions (eCampus – Lesson Unit 2)
- Tax Chart & Water Bill Project **(optional – check with your instructor** - project located in eCampus – Lesson Uni )
- Section 2.2
- **Supplement:** Difference Quotient and the Slope of the Secant Line – STEM majors only
- Sec 2.3 (MLP)

### Week 5
2-16-15

- Section 2.4 (MLP)
- **Supplement:** Tests for Symmetry (eCampus – Lesson Unit 2)
- Section 2.5 (MLP)
- Mastery Test: Chapter 2 (MLP)

---

Don’t forget to check eCampus for:
- A. Required Activities
- B. FAQ for the Chapter HW.
- C. Before each test, check Test Info in Lesson Unit.

---

Remember to do the following for each section:
- A. Media Lesson (Read text or watch video on MLP)
- B. Take Notes and then review the Focus Pages – STEM students only
- C. Do Homework

---

No classes Thursday, Feb. 19th – Conference Day. Campus closed to students.
<table>
<thead>
<tr>
<th>Date</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 6 2-23-15</td>
<td>- Written Test 2 – take next week.</td>
</tr>
<tr>
<td></td>
<td>- Section 3.1 + 3.2 + Sec 3.3 (MLP)</td>
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<tr>
<td></td>
<td>- Supplement: Completing the Square or ( h = -b/(2a) ) -- you have a choice.</td>
</tr>
<tr>
<td>Week 7 3-02-15</td>
<td>- Section 3.4 + Sec 3.5 (MLP)</td>
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<tr>
<td></td>
<td>- Mastery Test: Chapter 3 (MLP)</td>
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<tr>
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<td>- Written Test: Chapter 3 – take next week.</td>
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<tr>
<td>3-09-15</td>
<td>Spring Break – Campus Closed</td>
</tr>
<tr>
<td>Week 8 3-16-15</td>
<td>- Section 4.1 + Sec 4.2 (MLP)</td>
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<tr>
<td></td>
<td>- SLO Activity 3 “Analyzing Graphs” (eCampus ~ Lesson Unit 4)</td>
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<td></td>
<td>Required to turn in.</td>
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<tr>
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<td>Note: 5 SLO quizzes but only two SLO activities – one for SLO 1 and one for SLO 3</td>
</tr>
<tr>
<td>Week 9 3-23-15</td>
<td>- Section 4.3 + Sec 4.4 + Sec 4.5 - start (MLP)</td>
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<td>- Supplement - Example from section 4.5 including calculator steps (eCampus - Lesson Unit 4)  STEM majors only.</td>
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<tr>
<td>Week 10 3-30-15</td>
<td>- Section 4.5</td>
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<tr>
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<td>- Section 4.6 omit – STEM students will want to review.</td>
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<td></td>
<td>- Mastery Test: Chapter 4 (MLP)</td>
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<td>- Written Test: Chapter 4 – take next week.</td>
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<td></td>
<td>- SLO Quiz 2 &amp; 3 (MLP) – Required</td>
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<tr>
<td></td>
<td>- Section 5.1 (MLP)</td>
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<tr>
<td>Week 11 4-06-15</td>
<td>- Section 5.2 + Sec 5.3 + Sec 5.4 (MLP)</td>
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<td>- Section 5.5 + Sec 5.6 (MLP)</td>
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<tr>
<td>Week 12 4-13-15</td>
<td>- April 16th – Last Day to Withdraw ~ Contact instructor 1st!</td>
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<td>- Section 5.5 + Sec 5.6</td>
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<td>- Mastery Test: Chapter 5 (MLP)</td>
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<td>- Written Test: Chapter 5 – take next week.</td>
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<td>- Green Diploma Curve Fitting Project – Part II (optional ~ ask instructor ~ eCampus Lesson Unit)</td>
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<td>- SLO Quiz 4 (MLP) – Required</td>
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<tr>
<td>Week 13 4-20-15</td>
<td>- Section 6.2 + 6.3 (MLP) – check with instructor</td>
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<tr>
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<td>- Focus on setup of systems and using matrices to solve the systems – students will use rref calculator function to solve the matrix.</td>
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<tr>
<td></td>
<td>- Supplement: Calculator handout using rref to solve systems (eCampus–Lesson Unit 6)</td>
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<td></td>
<td>- Mastery Test Ch 6 – No written chapter 6 test – Mastery Test Due Monday of Week 14 (MLP)</td>
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<td></td>
<td>- SLO Quiz 5 (MLP) – Required</td>
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<tr>
<td>Week 14 4-27-15</td>
<td>- Section 8.1 (Sec 8.2 + Sec 8.3 + Sec 8.7 STEM students) (MLP)</td>
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<tr>
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<td>- Mastery Test Ch 8 – No written chapter 8 test</td>
</tr>
<tr>
<td></td>
<td>- Mastery Test – Due Monday of Week 15 (MLP)</td>
</tr>
<tr>
<td>Week 15 5-04-15</td>
<td>- Final Exam Review</td>
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<tr>
<td></td>
<td>- Proctored FINAL EXAM – deadline depends upon testing site</td>
</tr>
<tr>
<td></td>
<td>5/06/15 Last Day for NON-North Lake main campus test site</td>
</tr>
<tr>
<td>Week 16 5-11-15</td>
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</tr>
</tbody>
</table>

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Appendix iii

ACGM Learning Outcomes

Upon successful completion of this course, students will:

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomials and rational functions.
5. Recognize, solve and apply systems of linear equations using matrices.

Means of Assessment of Course Learning Outcomes

Course Learning Outcomes will be assessed by a variety of means.
1. A written exam or Mastery test in MyLabsPlus will be given to assess each Learning Outcome.
2. Homework will be assigned and assessed using the software component.
3. Observation of students as they interact in groups and discussions will be used to assess all outcomes.
4. Students will complete projects and learning activities that will address specific course learning outcomes.
Appendix iv

Student Guidelines for Written Assignments

Writing mathematics is a lot like writing a composition paper. There is an introduction (the problem), body (work/steps), and a conclusion (the answer). Your work must flow in a clear, precise and logical order. You must use the proper notation and use the properties, theorems, and rules correctly.

Listed below are the expectations and guidelines for every assignment. Your grade will be based upon how well you follow these guidelines. The goal of these guidelines is to help you become a better thinker and presenter which will be beneficial for any career you choose.

Expectations for all written assignments:
1. If you use a spiral notebook and tear out the pages, you need to trim off the “shards” before turning in the assignment. Loose-leaf paper is preferred.

2. Your name, course number, and chapter and section from the text (if applicable) should be written in the upper right-hand corner of the first page. Each assignment should be stapled in the upper left-hand corner of the page.

3. Write the section and number of the problem or name of the assignment for each problem. Next include a summary of the problem and directions. Be sure to include all the given information in your summary and a picture of the problem if necessary.

4. If the problem requires you to introduce variables in order to solve it, clearly define the variables. Variables must represent numerical quantities (George's age), not objects (George). Be sure to include the units: feet, pounds, minutes, etc..

5. For word problems you will need to set up the equation(s) that model(s) the problem using the defined variables. State your final answer using a complete sentence and include the correct unit of measure (i.e. inches, feet, minutes, square feet, etc.).

6. Write the steps of the problem down the left-hand side of the paper with each step directly under the previous one. Show every step. Don’t skip a step even if you may think it is easy. The steps should be clear and follow a logical order. If numeric computations are necessary, do them neatly on the right-hand side of the paper.

7. Every statement you write must be a true statement. Use the correct notation.

8. Check your answer to make sure it is reasonable/correct with respect to the problem.

9. Skip at least 1 line between each problem.

For detailed examples of required work, see “Guidelines for All Tests and Assignments” document posted in your eCampus classroom.