Northern Michigan University - Fall 2015
MA 104 – Algebra

Section 04 - 80925
Mon. and Weds. 5:00 p.m.

1209 New Science Facility

instructor: **Pat Jennings**
office: by arrangement
office phone: **228-2808 (leave message)**
email: **pjenning@nmu.edu**
Note: the best way to contact me is by email. Be sure to leave your phone number so that I can call you back

office hours: **Mon Weds 6:40 to 7:00** ***in the classroom***
Other times by appointment

course content: This course is designed for students who need college algebra but do not intend to take calculus. The applications of algebra are stressed; mathematical topics are chosen primarily on the basis of their immediate applicability. Such applications are drawn mainly from the natural sciences and technologies. This course will prepare students to study Trigonometry, MA 106, and Calculus with Applications, MA 271. And although MA 103 is the recommended preparatory course for the study of statistics, MA 104 is as an alternative prerequisite for Statistics. To move to the precalculus track (MA115) from MA104, a student must achieve at least a B- in this course.

This course satisfies the Foundation of Natural Science/Mathematics requirement. Students who complete this course should be able to demonstrate a basic understanding of mathematical logic; use mathematics to solve scientific or mathematical problems in college classes; express relationships in the symbolic language of mathematics; and appreciate the role of mathematics in analyzing natural phenomena.

Text: College Algebra and Trigonometry with Applications, 6th Edition, Levitan, Kolman, Shapiro, Bell. BVT Publishing (2011).
ISBN 9781627516532
You can purchase this text at the bookstore or online.

Online course materials may be accessed at http://www.bvtlab.com.
The course code is will be provided by email.

Tutoring: All Campus Tutoring (ACT) will offer MA104 tutoring on a walk-in basis at 111H LRC, by Starbucks. There is also a *Math Lab* that will be available for tutoring. I will email you the schedule after the semester starts.

Computer: An NMU email account is required. Note that, if you use the NMU web based email, your old messages are deleted periodically. I will be sending you emails periodically throughout the semester so you are responsible for reading your email in a timely manner and saving any important information, such as test answer keys.

A **graphing calculator** is needed for this class. I suggest a Texas Instruments TI-83 or similar calculator. I will show you examples using a TI-83 in class. Keep in mind, however, that your calculator may have slightly different functions. If you are not sure how to use them, be sure to ask me after class.

Alternatively, you can download a TI Emulator for the TI-73, TI-83+, and TI-83+ Silver Edition at http://education.ti.com/educationportal/sites/US/productDetail/us_sdk_73_83_84.html.

Click on the download button underneath the calculator. Select the first link "TI-83 Plus SDK" and click "continue as guest." Then, choose Run from the pop-up menu. You will need to restart your computer after installing the emulator.

To operate this emulator, instructions may be found at http://www.austintown.k12.oh.us/~aust_tr/homework/quickfiles/TI%2083%20and%2073%20Emulator/TI-83+%20Emulator%20Install%20and%20How%20to%20Use.pdf.

Grading: Grades will be weighted according to the following:

Chapter Tests	70%
Quizzes	10%
Final Exam	20%

The final grade will be a weighted average of the above corresponding to the following scale:

A	93 – 100
A-	90 – 92.9
B+	87 – 89.9
B	83 – 86.9
B-	80 – 82.9

C+	77 – 79.9
C	73 – 76.9
C-	70 – 72.9
D+	67 – 69.9
D	60 – 66.9
F	less than 60

There will be no other grades given and no "extra credit" assignments are available. Incompletes will be pursuant to University policy.

The final exam is scheduled for this course is:

Thursday, December 10, 2015 4 – 6 pm

You must take the final exam during the class period that you are enrolled in unless you make prior arrangements with your instructor.

Prerequisites: MA 100 (passed with C- or better) or satisfactory score on the math placement exam.

Last day to drop with 100% refund (No grade): Tuesday, September 1 at 5:00pm
Last day to drop with "W" grade: Friday, October 30, 5:00pm

Chapter Tests: All chapter tests will be given during class and you will have an hour to take each test. There will be a minimum of 5 chapter tests, but there may be more, depending on how the class goes. If it turns out that there are more than 5 tests, I will drop the lowest test score.

All chapter tests will be closed book and open notes. If you use notes, they must be your own. You may only use a calculator (including online emulator) and any documents that I send you by email. You may not use any other online resources.

I will have your graded tests returned to you within a week, barring unforeseen circumstances. After the last person takes the test, I will email you the answer key. You are responsible for reviewing the answer key and, if necessary, saving it on your computer.

Chapter tests will be during the second half of the regular class period and you may leave when you have finished. There is no time limit. Test dates will be announced in class and by email.

Makeup Tests: You MUST take the test during the regular class period. However, you may take a makeup test if you have a legitimate and verifiable reason (i.e. illness, sanctioned university activity, etc) and you notify

me by email before the scheduled test date, unless there is an emergency.

All makeups will be taken in the testing room at the Math and Computer Science Department office on the second floor of Jamrich Hall, room 2201. Testing room hours are strictly Monday-Friday from 8:00 am – 12:00 pm and 1:00 pm – 5:00 pm. Your exams will be taken away at 12:00 pm and 5:00 pm, whether you are finished or not. Please make sure that you have enough time to complete the exam. Also, you must also follow all instructions by the secretaries. Failure to do so will result in a zero for this test. Note that the secretaries cannot answer any questions about your test. If you have any questions about the test, contact your instructor.

Students with disabilities should work with the instructor and Disability Services to arrange for taking exams.

Quizzes: Quizzes will be given once or twice a week, unannounced, usually spontaneous, and cannot be made up under any circumstances. The easiest way to pass a quiz is to show up in class. If you miss only one or two quizzes, it will not significantly affect your grade, but, missing most of them will. You are encouraged to work with your classmates on the quizzes and I will come around and help you.

Homework: You should work out a substantial number of exercises from the text that pertain to the sections that we are going over. However, textbook exercises will not be collected or graded. I will let you know which section of the text is covered in class, but I will not assign exercises from the text.

If you want me to go over a particular textbook exercise in class, please email me the page, section and exercise number so that I have a chance to review it. I will probably not go over any homework problem unless you email it to me first!

Study Habits: As a general rule, you should spend two hours on homework for every hour that you are in class. (This applies for all courses that you take in college) Since this is a 4 credit hour course, you should spend at least 8 hours per week on reading and homework assignments. If you have had an especially hard time with mathematics in the past, plan on spending at least 12 hours per week for this course.

Budget your time wisely! There is nothing worse than cramming for a test on Friday night when your friends are out having a good time. I recommend that you set a schedule for this course (as well as your other courses) and stick to it. Plan your schedule now.

Attendance: Other than the quiz grades, I will not be taking attendance for this course. Since you are making a financial investment in this course, it is to your advantage to put your best effort into learning the material that is presented by attending class regularly, keeping up with the homework, and asking for help if you do not understand something. If you are not able to attend class due to work commitments, child care, or some other reason, let me know and we can work out some reasonable arrangement.

Academic Honesty: You must do all of your own work. If you cheat, you will not learn the material, and if you get away with passing this course by cheating, you will have a very difficult and frustrating time in your later courses. Also, you will be constantly looking over your shoulder worried about getting caught, and that, in itself is not worth it. If you do get caught cheating on a test or other assignment, you will get an automatic **F** for this course, and you could be subject to other sanctions. This includes having someone else take your online test or plagiarizing the project assignment. The bottom line is, if you cheat, you are really cheating yourself out of time, money, and, possibly, your future career.

Nondiscrimination Policy: Northern Michigan University does not unlawfully discriminate on the basis of race, color, religion, sex, national origin, age, height, weight, marital status, familial status, handicap/disability, sexual orientation, or veteran status in employment or the provision of services, and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities.

Anyone having civil rights inquiries may contact the Equal Opportunity Office, 502 Cohodas Hall, telephone number 906-227-2420.

Disabilities: If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1700 or disserv@nmu.edu). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

Course Objectives: Upon successful completion of this course the student will be able to:

Understand and apply the rules of linear, quadratic, polynomial, exponential, and logarithmic relations to solve equations.

Understand and apply the concepts and properties of a function to model real-world situations, and solve scenarios involving these functions.

Apply trigonometry to solve problems involving triangle relationships. Use calculators to set up and solve problems using graphs, tables, and formulas.

Evaluation of these learning outcomes will be done through assignments and exams.

Course Content

1. Review of Algebra
    - Polynomials and operations on polynomials
    - Solving linear and quadratic equations
    - Integral and rational exponents and radicals
    - Fractional expressions
    - The coordinate plane and graphing
2. Learning to Use the Calculator
    - To draw graphs and to solve equations and systems of equations
3. The Function Concept
    - Functional notation and graphs of functions
    - Expressing functional dependence algebraically
4. The Study of Special Functions
    - Linear, quadratic, polynomial, and rational functions
    - Functions involving radicals
5. Solving Equations
    - Algebraic and graphical methods
    - Solving literal equations
6. Exponents and Logarithms
    - Properties of the exponential and logarithmic functions
    - Solving exponential and logarithmic equations
    - Applications of the exponential and logarithmic functions
7. Systems of Equations
    - Linear systems: solving algebraically, graphically
    - Solving special non-linear systems
8. Other Topics
    - Introduction to probability
    - Introduction to right triangle trigonometry