Northern Michigan University
Mathematics and Computer Science Department
College Algebra and Trigonometry with Applications in Science and Technology
Winter 2019 (4 credits)
MA104-01 (10246) MWRF 12:00 – 12:50, JXJ 3102
MA104-02 (10247) MWRF 1:00 – 1:50, JXJ 3102

Instructor: Dr. Carol Bell **Office:** JXJ 2212
Office Phone: (906) 227-1603 **email:** cbell@nmu.edu
Office Hours: MWRF 11:00 – 12:00, or by appointment

You can also get help in the Math/CS Tutoring Lab located in WS 3810. I will post in EduCat a schedule of hours and list of tutors once it is available. For additional information on Tutoring Centers on campus, go to https://www.nmu.edu/tutoring/tutoring-centers.

Prerequisite:
MA100 (passed with a C- or better) or satisfactory score on the Mathematics Placement Exam. A graphing calculator or equivalent computer software is required.

Course Description: (from NMU Bulletin)
Continued development of students' abilities to manipulate mathematical statements and solve problems. A study of functions, graphing, equation solving techniques, exponents and logarithms, systems of equations, and elementary trigonometry. Emphasis is on applications in the applied sciences.

- Applies toward the quantitative reasoning and analysis (QUAR) general education requirement.
- Applies toward the mathematics competency university requirement (math) general education requirement.

General Introduction and Goals:
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.

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, MA106, and Calculus with Applications, MA271. And, although MA103 is the recommended preparatory course for the study of statistics, MA104 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.

Text and Other Course Information:

- Required: College Algebra and Trigonometry with Applications, 6th Edition, Levitan, Kolman, Shapiro, Bell. BVT Publishing (2014).
  - ISBN 9781627516532 (Textbook+ Bundle, which includes a loose-leaf black & white textbook plus a Product Key for online access) **OR**
  - ISBN 9781627516525 (eBook+, which includes an eBook plus a Product Key for online access)
- Online course materials may be accessed at http://www.bvtlab.com. When you initially enter the lab, you must enter the product key (see back of text) and the course code which is:

  12:00 Class – C2959D

  1:00 Class – 7F5D4A

  BE SURE YOU JOIN THE CORRECT CLASS OR YOU WILL HAVE SCORES OF 0 IN EDUCAT FOR THE ASSIGNMENTS!
- Required: A non-CAS graphing calculator (CAS means computer algebra system, which may not be used in this course).

Note – Temporary access to the course materials are available (trial expires 01/28/2019). Below are the instructions for the temporary eBook+ Access.

- If you do not already have a BVTLab account then please visit http://www.bvtlab.com and enter **A2521822** into the instant access code field and click go!
- Follow the instructions to access the eBook and online study tools (and a 10%-off coupon) for the first two weeks of class.
- Please visit http://bvtpublishing.freshdesk.com/support/solutions/folders/4000005239 to access the video help library for more information.

Learning Outcomes:

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

1. Identify, graph, and analyze quadratic and polynomial functions.
2. Identify, graph, and analyze rational functions.
3. Identify, graph, and analyze exponential functions.
4. Identify, graph, and analyze logarithmic functions.
5. Describe and perform transformations of basic functions
6. Determine the inverse of a function
7. Perform operations with functions including composite functions
8. Solve quadratic and polynomial equations.
9. Solve rational equations.
10. Solve radical equations
11. Solve absolute value equations
12. Solve exponential equations.
13. Solve logarithmic equations.
14. Solve systems of equations with two and three variables.
15. Solve systems of non-linear equations
16. Solve inequalities and systems of inequalities.
17. Apply elementary trigonometry to solve problems involving right triangle relationships.

18. Utilize law of sines and law of cosines to solve oblique triangles
19. Select and apply appropriate mathematical models to describe real-world problems.

Evaluation of these learning outcomes occurs through assignments and tests.

Classroom Laptop and Cell Phone Use:
Refrain from using your laptop for instant messaging, e-mailing, surfing the Internet, playing games, writing papers, doing homework, etc. during class time. Acceptable uses of your laptop include taking notes and working on assigned in-class activities, projects, and discussions that may be enhanced by laptop use. It is easy for your laptop to become a distraction to you and to those around you, including me, so please use it for classroom activities only. You may not use a cell phone during class time.

Assessment Format: Specific information on each assessment is below.

- **Online Homework (5%):** Each chapter has several homework assignments covering one or two sections in the text. All online homework is available in the BVT lab. Refer to text and class examples as well as the online resources (e.g., step-by-step solutions) to aid in working the homework problems. You may redo any of the homework assignments up to 10 times until the due date.

- **Written Homework (5%):** Written homework assigned on a regular basis.

- **Tests (90%):** A comprehensive end-of-unit test is given after completing each full chapter or combined chapters (for material that is not based on a single chapter). There are six tests with each worth 50 points and you must get at least 60% on each test to pass the course (30/50). You may use a 3-inch by 5-inch index card with any information on each test. A university-approved excuse is required for rescheduling any test. Make-up tests are not given so failure to notify me of your absence prior to the test will result in a score of 0, in which case you must take that test during finals week. Students with disabilities should work with Disability Services to arrange for taking tests.

Requirements to pass the course:

- You need to have a passing grade for each of the six tests (60% or higher). **You must re-take any tests below 60%** (same concepts, but not the same questions) during finals week. You may retake up to two tests during the final exam time. If you do not retake any tests below 60%, you will receive a grade of F for the course.
- If you want to re-take a test even if you obtained a passing grade (60% or higher), you may do so during finals week. However, whatever grade you get for the second test will override the previous one.

The final exam date and time for retaking tests are available online and listed below.

12:00 class – Monday, April 29; 12:00 – 1:50
1:00 class – Wednesday, May 1; 12:00 – 1:50

Grading Scale (%): If all tests have scores 60% or higher, your course grade will be weighted according to the percentages outlined under Assessment Format and grades assigned according to the table below.

100 – 95.0: A	86.4 – 82.5: B	76.4 – 72.5: C	66.4 – 62.5: D
94.9 – 89.5: A-	82.4 – 79.5: B-	72.4 – 69.5: C-	62.4 – 59.5: D-
89.4 – 86.5: B+	79.4 – 76.5: C+	69.4 – 66.5: D+	59.4 – 0: F

After retaking any tests during finals week, if you have more than two test scores below 60%, the highest grade you can receive is as follows, but you must earn the grade:

3 tests below 60% (D+)
4 tests below 60% (D)
5 tests below 60% (D-)
6 tests below 60% (F)

NMU's Non-Discrimination Statement:
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.

Disability Services:
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.

Need BVT help?
BVT Publishing Help Desk (with FAQs) –
http://bvtpublishing.freshdesk.com/support/solutions

Important Deadlines:

Type of Course	Last Day to Add a Class	Last Day to Drop for a 100% Refund and No Grade	Last Day to Drop a Course with a "W" Grade
Full Semester	Thursday, January 17 by 5 p.m.*	Tuesday, January 22 by 5 p.m.	Friday, March 29 by 5 p.m.
First Block	Tuesday, January 15 by 5 p.m.*	Friday, January 18 by 5 p.m.	Friday, February 15 by 5 p.m.
Second Block	Tuesday, March 12 by 5 p.m.*	Friday, March 15 by 5 p.m.	Friday, April 12 by 5 p.m.