PreCalculus – MA 115 – WINTER 2014

MEETING DAYS: M W R F
MEETING TIMES: 2:00 – 2:50
ROOM: WS 1705
INSTRUCTOR: Dr. Truong, Bao

New Science 1135
e-mail: btruong@nmu.edu is my preferred method of communication and the most reliable way to reach me.

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OFFICE HOURS: 10:00 – 11:00, 12:00 – 1:00 and 3:00 – 4:00 M W R F or by appointment. Please feel free to call or e-mail me for scheduling an appointment.

PREREQUISITES: MA 104 (B- or better), or MA 105/ MA 111(C- or better), or satisfactory score on the math placement exam.


COURSE DESCRIPTION: This course provides the necessary foundation for students who plan to study calculus. Topics include trigonometric functions and identities, basic laws in trigonometry, polar coordinates, complex numbers, transcendental functions, conics, parametric equations, vectors, three-dimensional analytical geometry and more.

COURSE GOAL: This course satisfies the Foundation of Natural sciences/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.

ASSESSMENT: The assessments will consist of 3 tests, 9 quizzes, homework assignments, and a final exam. By the end of the course students will be able to:

• create and use the unit circle to find exact values of six trigonometric functions at angles described by a multiple of 30, 40 and 60 degrees.
• use the formulas to find exact values of trigonometric functions.

• graph, manipulate and work successfully with functions including trigonometric functions.

• exhibit, in all written and oral mathematical work, a clear understanding of the basics of logical and analytical argumentation fundamental to processes of evidence-based and deduction-based scientific methods.

• utilize and explain clearly the mathematical rule of inference called Mathematical Induction to prove that typical formulas $P(n)$ are true for all $n = 1, 2, 3,\ldots$

• convert a point and an equation in terms of rectangular coordinates into the corresponding with the polar coordinates and vice versa.

**HOMEWORK:** There are two media for Homework in College Algebra.

There will be weekly online assignments administered through the online homework software WeBWorK, which is free of charge. WeBWorK problems are computational in nature and assess the techniques introduced in class. Many of these problems will resemble examples in the textbook or from class. You will get immediate feedback on your progress and will get several chances to ensure it. Webwork is accessed directly through the course’s EduCat™ website [https://educat.nmu.edu/](https://educat.nmu.edu/) or at [http://gauss.nmu.edu/webwork2/MA115-w14](http://gauss.nmu.edu/webwork2/MA115-w14)

There will also regular offline assignments which you need to write up on paper. These problems will require more than just procedure, might connect two or more things together, and will typically be the most difficult exercises you will work on over the semester. I will collect several offline homework assignments. The schedule for graded homework assignments and others such as extra credit assignments, projects, etc. will be determined by your instructor and will be notified in advance.

Homework should be neatly handwritten or typed. Skip a line between each problem. Copy the problem in its original form from the book; this includes word problems. Provide the solution to the problem. If you are having difficulty with a problem, make sure you get help before the due date. If you still can't complete the problem, do as much as you can, as you may receive partial credit.

**TESTS AND QUIZES:** There will be a quiz or a test every Friday. You will be expected to take all 3 tests. Only in the event of an unavoidable emergency will a make-up test be considered. Make-up tests will be more difficult than the original exam. You may drop the lowest quiz grade. If you are absent for a quiz, the missed quiz becomes your dropped grade.

**FINAL EXAM:** A comprehensive final exam will be given on Thursday, May 1, 2014 at 2:00 pm.
GRADES:

Weighted percentage:

Tests 40%  Quizzes 25%
Homework 10%  Final 25%

Grading Scale (approximate)

A  93% up    A –  90 – 92.9%
B +  87 – 89.9%  B  83 – 86.9%
C +  77 – 79.9%  C  73 – 76.9%
D +  67 – 69.9%  D  60 – 66.9%

F below 60%

You must get at least 70% on online Homework in order to pass this course.

IMPORTANT DATES:

First official day of classes - Monday, January 13, 2014
No classes on Friday, January 17, 2017
Martin Luther King Day observance – no classes – Monday, January 20, 2014
Mid-semester recess begins at 5:00 p.m. Saturday, March 1, 2014
Classes resume March 10, 2014
Last day of classes - Saturday, April 26, 2014

Friday, January 24 - Quiz 1
Friday, February 7 - Quiz 3
Friday, February 21 - Quiz 4
Friday, March 14 - Quiz 6
Friday, March 28 - Quiz 7
Friday, April 11 - Quiz 9

Friday, January 31 - Quiz 2
Friday, February 14 – Test 1
Friday, February 24 - Quiz 5
Friday, March 21 – Test 2
Friday, April 4 - Quiz 8
Friday, April 18 – Test 3

Final Exam: Thursday, May 1, 2014 at 2:00 pm.

EXTRA HELP:

• My office: during regular office hours or by appointments.
• Mathematics Tutor Lab: West Science 3810. Mathematics Tutor Lab is open M – R 9:00 am – 4:00 pm and F 9:00 am – 3:00 pm.
• All Campus Tutoring: Learning Resource Center 111H. All Campus Tutoring is open S – W 2:00 pm – 10:00 pm.
• Disability Service Office: If you have a need for disability-related accommodations or service, please inform the Coordinator of Disability Service in the Disability Service Office by either coming into the office at 2001 C.S. Hedgcock, or calling 227 – 1700, e-mailing 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.
**ATTENDANCE:** Regular attendance is expected from everyone. At the beginning of each class the attendance sheet will be passed around and it is your responsibility to sign it, otherwise you will be marked absent. For “Each day you miss, it takes one day longer to be good”.—Ben Hogan, Golfer

**CALCULATOR:** TI Interactive graphic software can be loaded to your ThinkPad for free at the Help Desk in LRC. Many of you have probably used graphing calculators in the past and you may already have your own calculator. If you have a graphing calculator, you should bring it to class since it is much more convenient than a laptop.

**CODE OF CONDUCT:** Since every student is entitled to full participation in class without interruption, all students are expected to be in class and prepared to begin on time. If for some emergency reason you are late, you must quietly enter the classroom and find a seat at the back row. All pagers, wireless phones or other devices that make noise must be turned off when you enter the classroom. Disruption of class, whether by talking, noisy devices, eating in class or other inconsiderate behavior, will not be tolerated. Students who violate these rules will be asked to leave the classroom and will not be allowed to return until they have spoken privately with the instructor.

**ADDITIONAL EXPECTATIONS:** Students will arrive for every class with necessary tools: text, notebook, pencil, and calculator. Cell phones and other electronic devices will be out of sight and on silent; speak to the professor if you anticipate receiving an emergency call during class.

**OTHER NOTES:**
You should come to class. I might not take attendance, but not coming to class is only cheating yourself of the education that you are paying for. If at any point you feel that you would rather not come to class because, in some lecture I give, everything seems to be something you already know, then you are mistaken: there is a great deal of depth behind every single idea we will cover in this course (some of which I will at least describe a little bit of, over the course of the semester), and if you think you understand the most obvious features of what we cover in class, then it is time to dig deeper and try to solve more difficult problems.

“A student who has merely done mathematical exercises but has never solved a mathematical problem may be likened to a person who has learned the moves of the chess pieces but has never played a game of chess. The real thing in mathematics is to play the game.”

Stephen J. Turner