WHITE MOUNTAINS COMMUNITY COLLEGE
2020 Riverside Drive, Berlin, NH 03570

COURSE OUTLINE

BMAT180	Pre-Calculus
Course Number	Title
Fall/Spring 2013-2014	Oxbow HS, Bradford VT
Semester	Location

Daniel Lemay
Instructor

09/06/13
Date

COURSE NUMBER AND TITLE: MAT 180 Pre-Calculus

CATALOG DESCRIPTION:

This course will cover the following topics: triangles and vectors; trigonometric identities, equations and graphs; exponential and logarithmic functions and equations; sequences and series; complex numbers as well as conic sections.

PREREQUISITE(S) (IF ANY): Pre-Calculus or PERMISSION OF INSTRUCTOR/Mathematics Department at Oxbow

Class Hours: 0.75 hours daily, full year
Lab Hours: 0
Credit Hours: 4

INSTRUCTOR:

Email: dlemay@oxbowhs.org
Phone: (802) 222 – 5214 ext 202
Office Hours: W/Th 2:30 to 3:15 other times by appointment

TEXTBOOK(S) REQUIRED:

Author: Lippmann, D and Rasmussen, M
Title: Precalculus: An Investigation of Functions
Edition: Edition 1
Publisher: Open Text

RECOMMENDED SUPPLEMENTARY READING:

Other materials as deemed appropriate

Objectives: The successful student will be able to:

1. Solve systems of linear and non-linear equations and inequalities.
2. Define and apply properties of linear, quadratic, polynomial, rational and inverse functions.
3. Define and graph exponential and logarithmic functions.
4. Solve exponential and logarithmic equations and problems of growth and decay.
5. Define and graph trigonometric functions.
6. Simplify trigonometic expressions using trigonometric identities.
7. Use trigonometric identities and equations in application problems.
8. Recognize arithmetic and geometric sequences and associate corresponding key formulas.
9. Use the Principle of Mathematical Induction.
10. Employ the graphing calculator for the numerical and graphical solution of problems.
11. Demonstrate proficiency in understanding, interpreting, evaluating and applying quantitative data and information.

LEARNING ACTIVITIES:

Lectures, Guided practice, class/group explorations, homework

LIBRARY RESOURCES:

There are many library resources available in our library. Please contact the library staff for more information. In addition students who take advantage of the Running Start option available for this course and register for WMCC's course will have access to all the resources available to on-campus students at the WMCC Fortier Library (http://www.wmcc.edu/services/lib/) on the Berlin campus. These students will also be sent information about how to access electronic resources such as catalogs, books, database searches available to Running Start students through the Fortier Library.

GRADING POLICY:

Every graded assignment will be awarded a designated number of points. Each marking period's grade will be determined using a running total of points earned by points possible. The average (mean) of each marking period, two 90 minute comprehensive exams and a culminating final project will determine your grade for Running Start WMCC credit.

In addition to homework, quizzes/tests, in class explorations, you are responsible for one paper each semester. Details will follow.

Please note that for students taking the course for WMCC credit, WMCC assigns letters grades using these numerical equivalencies:

A: 93-100 (There is no A+ grade.)	B+ : 87-89	C+ : 77-79	D+: 67-69	F: Below 60
A-: 90-92	B : 83-86	C: 73-76	D: 63-66	
	B-: 80-82	C-: 70-72	D-: 60-62	

INSTRUCTOR'S POLICIES:

ACADEMIC HONESTY – Original thinking and intellectual honesty are central to a college education. Research projects require the ongoing use of existing works, but students must conduct themselves with proper regard for the rights of others and of the college, in a context of mutual respect, integrity and reason. Activities such as plagiarism and cheating are not acceptable and will not be condoned by the college. Students involved in such activities are subject to serious disciplinary action. The following are presented as examples of academic dishonesty:

1. Misrepresenting academic work done by someone else as one's own efforts, with or without permission of the person.

2. Providing or using prohibited assistance in assignments and examinations.
3. Unauthorized communication in any manner with other students during an examination; collaboration in the preparation of reports or take-home examinations; copying, giving aid or failing to follow the faculty member's instructions.
4. Tampering with or falsifying official college records.
5. Infringing upon the right of other students to fair and equal access to college library materials and comparable academic resources.
6. Falsification of data collected for and presented as part of course requirements.
7. Presenting as one's own ideas, another person's work or words without proper acknowledgment.

There may be other instances of academic dishonesty, which will be identified by a faculty member.

REQUIRED TOOLS OR EQUIPMENT:

TI-83 Plus or higher graphing calculator.

SPECIFIC DIRECTIONS OR RECOMMENDATIONS:

Please be advised that students currently receiving modifications in an IEP under the Individuals with Disabilities Education Act and Section 504 of the Rehabilitation Act will not be eligible for those same modifications in a college course in the Running Start program. While students may be eligible for accommodations through the college's Disabilities Services Office, students must be otherwise qualified to do college level work and address the essential elements of the course without fundamental alterations to the curriculum. If you have questions, please contact the Disabilities Coordinator at the White Mountains Community College or the Running Start Coordinator at WMCC.

DISCRIMINATION POLICY: White Mountains Community College does not discriminate on the basis of race, color, national origin, sex, age or handicap in admission or access to, or treatment or employment in, its programs and activities. Any persons having inquiries concerning White Mountains Community College's compliance with the regulations implementing Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, or Section 504 of the Rehabilitation Act of 1973 is directed to contact Peg Heaney, 2020 Riverside Drive, Berlin, NH 03570. Peg Heaney has been designated by White Mountains Community College to coordinate the institution's efforts to comply with the regulations implementing Title VI, Title IX and Section 504. Any person may also contact the Assistant Secretary for Civil Rights, U.S. Department of Education, or the Director, U.S. Department of Education, Office for Civil Rights, Region 1,140 Federal Street, Boston, MA, 02110.

Course # MAT180

COURSE TIMETABLE

Week of	Objective	Assignments
08/28/13	• How this course works • Functions and Function Notation • Domain and Range	Lippmann Sec 1.1 and 1.2 MOM assignment Problem Set 1
09/03/13	• Rates of Change and function behavior for the Tool Kit functions • Composition of functions	Lippmann 1.3 and 1.4 MOM assignment Problem Set 2
09/09/13	• Transformations of functions • Functions and their inverses	Lippmann 1.5 and 1.6 MOM Assignment Problem Set 3
09/16/13	• Linear Function Review	MOM Assignment PS 4
09/23/13	• Absolute Value as a Function	Lippmann Sec 2.5 MOM Assignment
09/30/13	• Power Functions and Polynomial Functions • Working with Quadratic Functions	Lippmann Sec 3.1 and 3.2 MOM Assignment PS 5
10/07/13	• Working with Polynomial Functions	Lippmann Sec 3.3 MOM PS 6
10/14/13	• More work with Polynomials	Project assignment

10/21/13	➢ Working with Rational Functions	Lippmann Section 3.4 MOM PS 7
10/28/13	➢ Working with inverse functions and Radical Functions	Lippmann Section 3.5 MOM PS 8
11/04/13	➢ Exponential Functions and their graphs	Online Exam Lippmann Sec 4.1 and 4.2 MOM
11/11/13	➢ Logarithmic functions and their properties	Quiz Lippmann Section 4.3 and 4.4 MOM PS 9
11/18/13	• Graphs of Log Functions	Quiz Lippmann Section 4.3 and 4.4 MOM PS 10
11/25/13	Thanksgiving Break	
12/02/13	Review of Exponential/Logarithmic functions and their graphs	HO PS 11
12/09/13	Exponential and Logarithmic Models	Lippmann Sec 4.6 MOM PS 12

12/16/13	More practice with last week's work Project: Fitting Models to real world data.	HO
01/02/14	Review/Working on Semester Project	
01/06/14	Fitting Exponential Models to Data	Lippmann Sec 4.7 MOM PS 13
01/13/14	Semester Project is Due Review/Mid Year Exams	
01/21/14	Working with Circles on a Cartesian Plane	Lipmann Sec 5.1 MOM Assignment PS14
01/27/14	Angles of Rotation SOHCAHTOA review	Lippmann Sec 5.2 MOM Assignment PS 15
02/03/14	Points on Circles using Sine and Cosine	Lippmann Sec 5.3 MOM Assignment PS 16
02/10/14	The Other Trig Functions	Lippman Sec 5.4 MOM Assignment PS 17 Trig Identity Video assigned
02/17/14	Right triangle Applications	Lippman Sec 5.5 MOM Assignment PS 18
03/05/14	Graphs of Trig Functions Can-It Exploration	HO Lippman Sec 5.5 PS 19

03/17/14	More work with Graphing Trig Functions	MOM PS 20
03/24/14	Sinusoidal Graphs	Lippman Sec 6.1 MOM PS 21
03/31/14	Graphs of other Trig Functions	Lippman Sec 6.2 MOM PS 22
04/04/14	Inverse Trig Functions	Lippman Sec 6.3 MOM PS 23
04/21/14	Solving Trig Equations Solving Trig Equations Requiring Identities	Lippman Sec 6.4 and 7.1 MOM PS 24
04/28/14	Modeling with Trig Functions	Lippmann Sec 6.5 MOM PS 25
05/05/14	More Trig Identities	Lippman Sec 7.2 and 7.3 MOM PS 26
05/12/14	Working with the Law of Sines and the Law of Cosines Working with Vectors	Lippman Sec 8.1 and 8.4 MOM PS 27
05/19/14	Working with the Conic Sections and Solving Systems of non-linear equations	Handouts http://Interactmath.com assignment PS 28 Quiz
05/27/14	Working with Arithmetic and Geometric Sequences and Series	Handouts PS 29 Quiz
06/02/14	Proving a statement using Mathematical Induction	Handout Online Final Exam Takehome part of Exam

06/09/14	Review Working on Exam	
06/16/14	Final Exam Week	