

**DEGREE/PROGRAM CHANGE
FORM C
Form Number: C1565**

Fields marked with * are required

Name of Initiator: Ana Parra Lombard **Email:** alombard@unm.edu **Phone Number:** 505 277-5250
Date: 11-04-2014

Associated Forms exist? Initiator's Title
Faculty Contact Administrative Contact
Department Admin Email
Branch Admin Phone

Proposed effective term

Semester Year

Course Information

Select Appropriate Program
Name of New or Existing Program
Select Category Degree Type
Select Action

Exact Title and Requirements as they should appear in the catalog. If there is a change, upload current and proposed requirements.

See current catalog for format within the respective college (upload a doc/pdf file)

Does this change affect other departmental program/branch campuses? If yes, indicate below.

Reason(s) for Request (enter text below or upload a doc/pdf file)

HED competencies. Math 153 (B1436 form) is a combination of MATH 150 and Math 123. Students will need to be able to count MATH 153 to fulfill UNM Core Requirements in place of MATH 150.

[Math 153 Syllabus from fall 14 pilot m116 v2 1-29-15.doc](#)
[Math 153 - file for form C 11-4-14.pdf](#)

Upload a document that includes justification for the program, impact on long-range planning, detailed budget analysis and faculty workload implications. (upload a doc/pdf file)

[Budget for Math153 cost.pdf](#)

Are you proposing a new undergraduate degree or new undergraduate certificate? If yes, upload the following documents.

Upload a two-page Executive Summary authorized by Associate Provost. (upload a doc/pdf file)

Upload memo from Associate Provost authorizing go-ahead to full proposal. (upload a doc/pdf file)

MATH 153: Pre-calculus and Trigonometry

University of New Mexico, Fall 2014

Instructor: Derek Martinez

Office: SMLC 369

E-mail: dmartin216@unm.edu

Office Hours:

Prerequisite: MATH 121 or placement test

Course Description: *This course is a combination of Math 123 and Math 150. Students who complete this course may go directly into Math 162.*

Topics covered: Algebraic expressions, algebraic equations, inequalities, functions, graphing. Exponential, logarithmic, and trigonometric functions. Complex numbers and vectors. Limits

Textbook: *Pre-calculus Mathematics*, Steward 6E

Calculator: Scientific calculator may be necessary. **No calculators** will be allowed on any of the exams (including the final).

Homework: Your daily homework is your most important effort in this course. It is imperative that you do all of the assigned problems, especially the hard ones, because this is how you actually learn the material. Expect 2-3 hours of homework for every hour of class meeting time (on average **6-9 hours per week**). The HW you turn in should be neat, organized and your papers must be stapled to receive credit (do not put your work together at the last minute!).

WebAssign: is the electronic support that is crucial for your success in this class. It includes practice problems, quizzes, and tutorials. To register, go to <http://www.webassign.com> A registration code comes with your new textbook. Your instructor will have your course code.

Quizzes: Quizzes will be given throughout the term. Your two lowest quiz grades will be dropped. No make-up quizzes will be given.

Exams: There will be three in-class exams, 100 points each. No notes or calculators will be allowed on exams, including the final. You have to show all your work and use proper mathematical notation to receive full credit. A correct answer without work will receive 0 points. If you **must** miss an exam, you **must** contact your instructor **on** or **before** the day of the exam in order to discuss a make-up test. Make-up tests will be given solely at your instructor's discretion. If you do not contact your instructor immediately, you may be dropped from the course.

Final Exam: Core final exam, worth 200 points. The final exam will be on **Monday, Dec 8th, 10 am-12 pm, room TBA.**

Grading: To get full credit on graded work students must address all mathematical components presented by the problem, showing all steps and calculations. The use of proper notation, well structured procedures, and legibility will be taken into account when assigning points.

Your grade will be determined based on your performance on the following:

Webassign: 50 points

Written HW: 75 points

Quizzes: 75 points

Exams: 300 points

Final Exam: 200 points

Total: 700 points

Attendance: Attendance is mandatory. If a student has more than three unexcused absences he/she may be dropped from the course. Tardiness or early departure may be regarded as absence. Please note that it is the student's responsibility to drop the course if he/she stops attending. A failing grade of "F" may be assigned if the student stops attending and does not drop.

Student Behavior: According to the Code of Conduct as stated in the Policies and Regulations for UNM, student activities that interfere with the rights of others to pursue their education or to conduct their University duties and responsibilities will lead to disciplinary action. This includes any activities that are disruptive to the class and any acts of academic dishonesty. Students are expected to behave in a courteous and respectful manner toward the instructor and their fellow students. Students may be dropped for inappropriate behavior. The use of cell phones, headphones, etc. is not permitted during class or exams.

Cheating: Cheating of any kind will not be tolerated. Examples are: looking at a neighbor's exam, plagiarizing, using a calculator when not permitted, using the book and/or a cheat sheet, modifying an exam after it is graded, etc. The instructor may warn an offending student, the score of the exam may be reduced, the score may be set to zero, the student may get dropped from the class, the student may get a grade of F for the class, and in most cases the incident will be reported to the Dean of Students.

Deadlines: The Department of Mathematics and Statistics will adhere to all of the registration deadlines published by the Office of the Registrar in the schedule of classes.

Grading: To get full credit on graded work students must address all mathematical components presented by the problem, showing all steps and calculations. The use of proper notation, well structured procedures, and legibility will be taken into account when assigning points.

Students who withdraw after the end of week 3 will receive a grade of "W". If you do not withdraw, you will receive a letter grade of A, B, C, D, or F (but not a W). See the syllabus for all deadlines.

Accessibility Services (Mesa Vista Hall 2021, 277-3506) provides academic support to students who have disabilities. If you think you need alternative accessible formats for undertaking and completing coursework, you should contact this service right away to assure your needs are met in a timely manner. If you need local assistance in contacting Accessibility Services, see the Bachelor and Graduate Programs office.

Extra Help: In addition to your instructor's office hours, there is extra help available at:

- The *Algebra Tutoring Table*, staffed by algebra instructors 9 - 3 every day. It is located in front of the elevators on the second floor of DSH and behind room #224.
- CAPS: Center for Academic Program Support. Located on the 3rd floor of Zimmerman Library, 277-4560
- MEP Engineering Annex, room 210, or call the study group at 277-8795
- CATS: Counseling and Therapy Services, Student Health Center, 277-4537. (For test anxiety, etc.)

Registration, Drop, and Grade Change Deadlines: The Department of Mathematics and Statistics will adhere to ALL registration deadlines published by the Office of the Registrar in the schedule of classes. For full term classes in the fall 2014 term the deadlines are:

August 29 th	Add a course, change sections, or change grade mode in loboweb
September 5 th	Last day to drop without a grade
September 12 th	Last day to change grading option in person
November 7 th	Last day to withdraw without the Dean's permission (grade of W assigned)
December 5 th	Last day to withdraw with the Dean's Permission

Math 123-150: Trigonometry and Precalculus Student Learning Outcomes

By the end of the semester, students should be able to

(SLO#1) Use Correct Mathematical Notation and Terminology

(SLO#2) Graph and Interpret Functions: Sketch and interpret graphs in context of applications; apply appropriate transformations for the following: polynomial functions (linear, quadratic, followed by those with degree three and higher), trigonometric functions, exponential and logarithmic functions, rational functions, parametric equations, and conic sections. Be able to create and graph piece-wise functions from all of the above. Create graphs to model situations.

(SLO#3) Perform Operations on Functions: Be able to use function notation to evaluate expressions and perform operations on functions such as addition, subtraction, multiplication, division, composition and difference quotients of functions. Be able to find the domain and range of functions as well as their inverses (if they exist).

(SLO#4) Analyze the Behavior of Functions: Be able to determine the end behavior and intercepts of functions. Be able to determine extreme values of functions and intervals where functions increase or decrease. Apply this analysis to interpreting an applied problem.

(SLO#5) Solve Equations: Be able to solve exponential, logarithmic, trigonometric, quadratic, radical, and rational equations. Also be able to solve linear and non-linear systems of equations. Be able to interpret solutions in context of applications.

(SLO#6) Solve Applied Problems: Be able to set up models from word problems using appropriate functions or laws.

(SLO#7) Perform Operations with Complex Numbers and Vectors: Be able to determine the trigonometric and polar form of a complex number. Be able to add vectors in two dimensions, project vectors onto one another, and determine the angles between vectors. Use vectors and complex numbers to solve applied problems.

Note: The instructor reserves the right to change the syllabus at any point of time during the semester.

Tentative Schedule

Week	Week of	Monday	Wednesday	Friday
1	8/18	1.7 Inequalities	2.2 Graphs of Functions/2.4 Average Rates of Change	2.5 Transformations
2	8/25	2.6 Combining Functions	3.1 Quadratic Functions and Models	3.2 Polynomial Functions
3	9/1	No Class	3.7 Rational Functions	Review
4	9/8	Exam 1	2.7 Inverse Functions	4.1,4.2 Exponential Functions
5	9/15	4.3 Logarithmic Functions	4.4 Laws of Logs/4.5 Exponential Equations	4.6 Exponential and Log Models
6	9/22	10.8 Non-linear Systems	11.1/11.2 Parabolas and Ellipses	11.3 Hyperbolas
7	9/29	Review	Exam 2	6.1 Angle Measure
8	10/6	6.2 Trig of Acute Angles/Applications	6.3 Trig Functions of Angles	Holiday
9	10/13	6.4 Inverse Trig Functions and Right Triangles	6.5/6.6 Law of Sines and Cosines	5.1 Unit Circle
10	10/20	5.2 Trig Functions of Real Numbers	5.3 ,5.4 Trig Graphs	5.5 Inverse Trig Functions
11	10/27	7.1 Basic Trig Identities	7.2, 7.3 Special Formulas	7.4 Trig Equations
12	11/3	7.5 More Trig Equations	Review	Exam 3
13	11/10	8.4 Parametric Equations	8.1 Polar Coordinates	8.3 Polar Form of Complex Numbers
14	11/17	9.1 Vectors in 2D	9.1, 13.1 Limits	13.1 Limits
15	11/24	13.2 Limits	13.4 Limits	Holiday
16	12/1	Review for	Cumulative	Final
17	12/8	Final Exam	Monday Dec 8th	10am-12pm

Course	Title	Instructor	Enrollment	credit hours, total	Salary Cost	Estimated salary	Salary, real or estimated	Graders	Coordinator for
18043-MATH 123 001	Trigonometry	Tan, Z.	48	144	\$3,316		\$3,316	\$0		\$5,750 all trig
18045-MATH 123 002	Trigonometry	Kauffman, V.	51	153	\$3,316		\$3,316	\$0		
18046-MATH 123 003	Trigonometry	Dinh, H.	49	147	\$4,000		\$4,000	\$0		
18047-MATH 123 004	Trigonometry	Champine, K	50	150	\$5,555		\$5,555	\$0		
18048-MATH 123 005	Trigonometry	Morre, G	53	159	\$8,648		\$8,648	\$0		
18050-MATH 123 006	Trigonometry	Komagata, D	44	132	\$4,000		\$4,000	\$0		
18051-MATH 123 007	Trigonometry	McBeth, N	50	150	\$3,316		\$3,316	\$0		
47682-MATH 123 008	Trigonometry	Komagata, D	47	141	\$4,000		\$4,000	\$0		
45899-MATH 123 009	Trigonometry	Ward, RS	44	132	\$3,316		\$3,316	\$0		
48693-MATH 123 010	Trigonometry	Komagata, D	49	147	\$4,000		\$4,000	\$0		
50881-MATH 123 012	Trigonometry	Garcia, R. (UNM West)	5	15		\$10,000	\$10,000	\$0		
49057-MATH 123 013	Trigonometry	McBeth, N	53	159	\$3,316		\$3,316	\$0		
18377-MATH 150 001	Pre-Calculus Math	Ifzarene, K.	48	144	\$4,000		\$4,000	\$0	\$5,750 All 150	
18369-MATH 150 002	Pre-Calculus Math	Ward, RS	42	126	\$3,316		\$3,316	\$0		
18370-MATH 150 003	Pre-Calculus Math	Boucheron, S.	46	138	\$4,000		\$4,000	\$0		
18371-MATH 150 004	Pre-Calculus Math	Ward, RS	46	138	\$3,316		\$3,316	\$0		
18372-MATH 150 005	Pre-Calculus Math	Andrew, P	49	147	\$4,000		\$4,000	\$0		
18373-MATH 150 006	Pre-Calculus Math	Andrew, P	50	150	\$4,000		\$4,000	\$0		
18375-MATH 150 008	Pre-Calculus Math	McBeth, N.	46	138	\$3,316		\$3,316	\$0		
18376-MATH 150 009	Pre-Calculus Math	McBeth, N	45	135	\$3,316		\$3,316	\$0		
45900-MATH 150 010	Pre-Calculus Math	Boucheron, S.	42	126	\$4,000		\$4,000	\$0		
48917-MATH 150 011	Pre-Calculus Math	Ifzarene, K.	48	144	\$4,000		\$4,000	\$0		
50882-MATH 150 012	Pre-Calculus Math	Ifzarene, K. (UNM West)	4	12		\$4,000	\$4,000	\$0		
TOTALS			1009	3027	\$84,047	\$14,000	\$98,047	\$0		\$11,500

Total personnel cost, existing \$109,547

Average tuition per hour, est. 185 Total tuition taken in \$559,995

number of sections 22
 Average instructional cost per section \$ 4,457

Planned	Planned	Sections	students per	credit hours, total	average salary	total salary	Grader for one section	Graders	Coordinator for
	Math 123 (3 units)	7	45	945	\$ 4,457	\$ 31,197			\$5,750	All 123
	Math 150 (3 units)	7	45	945	\$ 4,457	\$ 31,197			\$5,750	All 150
Pay 167% as much per section	Math 153 (5 units)	5	45	1125	\$ 7,443	\$ 37,213	\$ 882	\$ 4,410	\$5,750	All 153
	TOTALS		855	3015		\$ 99,607		\$ 4,410	\$ 17,250	

Total personnel cost, proposed \$121,267

number of sections 19
 Average instructional cost per section \$ 6,382

Extra Cost \$11,720