Dual Credit Intermediate and College Algebra
Blended
Math 120/Math121

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1 Overview

Welcome to Math120/Math121 blended. Here is the UNM course description for Math 120.

> Preparation for MATH 121, 129 and STAT 145. Covers linear equations and inequalities, polynomials, factoring, exponents, radicals, fractional expressions and equations, quadratic equations, perimeters, areas of simple geometric shapes, and logarithms. Emphasis on problem solving skills.

Here is the UNM course description for Math 121

> Preparation for MATH 150 and 180. The study of equations, functions and graphs, especially linear and quadratic functions. Introduction to polynomial, rational, exponential and logarithmic functions. Applications involving simple geometric objects. Emphasizes algebraic problem solving skills. Meets New Mexico Lower-Division General Education Common Core Curriculum Area II: Mathematics.

In this course, we are going to be covering a blended version of these two courses. The material from the first semester will approximately cover Math 120 and the second semester will cover Math 121, but the goal is to make a seamless transition between the two courses.

2 Course Learning Outcomes

Here are the student learning outcomes from these courses, broken down into Math 120 and Math 121.

Math 120 Student Learning Outcomes: By the end of the course, students will be able to do the following.

1. Students will obtain the following *skills.*
   (a) Sketch the graphs of linear, quadratic, and exponential functions.
   (b) Solve systems of two linear equations.

(c) Solve quadratic equations using factoring, quadratic formula, and the square root method.

(d) Solve equations containing rational expressions.

(e) Perform operations on polynomials and factor certain types of polynomials.

(f) Solve polynomial equations by factoring.

(g) Correctly use function notation and vocabulary related to functions.

(h) Find the value of a function for a given domain value.

2. Students will obtain the following *conceptual understanding*.

(a) Interpret slope in relation to variable coefficients and as a rate of change.

(b) Apply solution methods learned to "real-world" problems.

(c) Analyze solutions and give them contextual meaning.

(d) Actively and effectively work in groups to solve problems and increase understanding of concepts, drawing on the skills and knowledge of all group members.

Math 121 Student Learning Outcomes: By the end of the course, students will be able to do the following.

1. Understand the concept of a function

(a) Apply the definition of a function.

(b) Identify domain and range. Interpret in context when appropriate.

(c) Use function notation to evaluate functions.

2. Build New Functions from Existing Functions.

(a) Use graphing transformations.

(b) Use function arithmetic.

(c) Find inverse functions.

3. Build and Analyze Graphs.

(a) Understand the relationship between a function's equation, table and graph.I

(b) Identify or sketch the following key features of a graph: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; slope; vertex; and end behavior.

(c) Create graphs using key features.

(d) Write the equation of a function or circle given its graph based on the key features shown (reverse of above outcome).

(e) Interpret key features of functions in context.

4. Apply Algebraic Techniques.

(a) Evaluate numeric expressions in exact form and find decimal approximations for irrational numbers.

(b) Solve equations and inequalities.

(c) Simplify algebraic expressions to analyze functions and graphs.

3 Required Text

The required text for this course is:

- Beecher, Penna, Johnson, Bitinger, *College Algebra with Intermediate Algebra: A Blended Course* (Pearson, 2017).

At the end of this syllabus will be a schedule of topics you will cover in class.

4 Attendance Policy

In this course, we will adopt the attendance policy of your high school teacher.

5 Course Structure

In this class, I'm going to ask you to read. Every week, I will send out reading questions for you to answer through Blackboard Learn. Before, every computer class, you *must* have prepared on your own paper, answers to the reading questions and you will take the first 10 minutes to respond to my email. The rest of the computer session will alternate weekly between working on Discusion board questions and taking tests on the online program *MyMathTest.*

1. Reading Questions: These reading questions will be used to see how much you've read. I may ask you to tell me anything you've found particularly interesting are tell me which definitions or examples you've had trouble understanding. I may invite you to ask me any questions you have about the reading. I will often use these reading questions as a guide for the discssion questions.

2. Discussion Board: In the discussion board questions, I will ask you questions that are a little more challenging than in the reading. I may ask you to come up with your own problems or ask give you examples to think about how the mathematics you are learning may be useful outside of class. I also may ask you to do more elaborate computational problems and ask you to discuss which parts of the problems were particularly difficult.

3. *MyMathTest*: MyMathTest is the online program we are going to be using to admister your tests. These tests are to see how well you've learned the course material.

In addition, I will be passing out projects for you to work on based on the course material.

6 Grading Policy

Your grades will be based on a combination of your high school work and the work I give you. The reading questions and discussion questions are for me to see that you are trying read and learn. And the MyMathTest exams are for me to see how much you've learned. I will also give out a midterm and final exam. Before you take these I will give your teacher review exams to help you study. I will also make arrangements with your teacher to go to you class periodically to answer questions and help with the reviews. Your grade will be calculated as follows.

Requirement	% of Grade
1.Reading Questions and Discussions	10%
2. Projects	10%
3. MyMathTest Assignments	10%
4. Midterm	10%
5. High School Work	30%
6. Final Exam	30%

You must receive at least 70% on the final exam to get credit for the class.

7 Make-up Policy

I will allow up to four late submissions of Projects and MyMathTest Assignments for any reason. To make up one of these assignments, you must let me know by email and I will allow you to make up the assignment for full credit. Once the four assignment limit has been reached, I will not allow any further make-ups.

Because of the nature of the reading questions and discussions, I will not allow make-ups for these assignments.

8 A note on academic integrity

We will follow university policy and on academic integrity.

> Having academic integrity is paramount to your success in any class. Plagiarism or cheating is not tolerated. Any instance of this will result in a grade of zero for that assignment. Here is the link to the UNM Academic Dishonesty Policy: https://policy.unm.edu/regents-policies/section-4/4-8.html. The policy states:
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> Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or who otherwise fails to meet the expected standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.
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> Academic Dishonesty is defined as: "Academic dishonesty" includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

9 Students with Disabilities

If you have a documented disability, please provide me with a copy of your letter from Equal Access Services as soon as possible to ensure that accommodations are provided in a timely manner.

10 EQUAL OPPORTUNITY AND NON-DISCRIMINATION:

In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered "responsible employees" by the Department of Education (see page 15 - http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: https://policy.unm.edu/university-policies/2000/2740.html.

11 Schedule

This is the Fall 2017 schedule.

Week number	Sections Covered
1	R.1,R.2,1.1 and 1.2
2	2.1,2.2,2.3
3	2.5,2.6
4	3.1,3.2,3.3
5	3.4,1.4
6	R.3,R.7,6.1,6.2
7	9.1,9.2.9.3
8	Midterm Review and Midterm
9	Thankgiving Break
10	9.4,9.5
11	4.1,4.2,4.3
12	4.4,7.1,7.2
13	7.4,7.5
14	5.1,5.2
15	6.1-6.3
16	Review for Final
17	Final Exam

This is the Spring 2018 schedule.

Week number	Sections Covered
1	R.4,R.5,R.6
2	1.1-1.5
3	2.6,2.7,3.1-3.4
4	4.3-4.8
5	7.1-7.5
6	2.1-2.4,6.8
7	5.1-5.4 (Review from 120) Distance Formula, 11.2 (only circles)
8	Midterm Review and Midterm
9	Spring Break
10	9.1-9.3
11	9.4,9.5
12	9.6,9.7
13	5.3-5.5
14	6.1-6.3 (Review from 120) 6.4-6.7
15	8.1-8.6
16	Review for Final
17	Final Exam