



Math 1215 Dual Credit Valencia HS

Fall 2021

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3 Credit hours

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COURSE DESCRIPTION, GOALS, AND OBJECTIVES

In this course we will consider linear, quadratic, polynomial, rational, and radical equations. We will also do some work with absolute values, delve into what a function is, consider domain and range for said functions, and give an introduction to exponential and logarithmic functions. We will also develop strategies for solving single variable equations and contextual problems. (*3 Credit Hours*). The goals for this course are to explore linear functions, systems of linear equations, linear inequalities, polynomials and factoring, rational functions, and radical functions, and we will introduce exponential and logarithmic functions.

Student Learning Outcomes/Course Objectives

The following are the objectives for the course. Each module/week/unit will have specific learning objectives listed on the Overview Page. The activities in that module (i.e., discussions, assignments, and assessments) are developed so that you can demonstrate you have met these objectives:

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

1. Demonstrate appropriate use of basic function language and notation.
 - a. Communicate or present mathematical concepts using correct mathematical notation and terminology.
 - b. Correctly use function notation and vocabulary related to functions.
 - c. Determine function values for given domain values and determine domain values for given function values.
 - d. Determine domains for specific functions.
2. Convert between equivalent forms of algebraic expressions.

- a. Simplify expressions using properties of exponents.
- b. Add, subtract, and multiply polynomials.
- c. Rewrite line equations in different forms (slope-intercept, point-slope, standard)
- d. Factor some types of polynomials.
- e. Simplify radical expressions.
- f. Simplify rational expressions.
- g. Rewrite exponential functions in logarithmic form and vice versa.
3. Solve single-variable equations of the types listed above.
 - a. Solve for a single variable in a linear equation.
 - b. Solve for a specified variable in a formula.
 - c. Solve quadratic equations using factoring, quadratic formula, and the square root method.
 - d. Solve equations containing rational expressions.
 - e. Solve equations containing radical expressions.
 - f. Solve absolute value equations in one variable.
 - g. Solve exponential and logarithmic equations using equating bases.
4. Interpret and communicate algebraic solutions graphically and numerically.
 - a. Determine equations for lines in the three forms – slope-intercept and point-slope.
 - b. Sketch the graphs of linear functions.
 - c. Interpret slope in relation to variable coefficients and as a rate of change.
 - d. Graph linear inequalities in one variable on a number line and write corresponding interval notation.
 - e. Determine when linear equations represent parallel and perpendicular lines.
 - f. Sketch graphs of quadratic functions.
5. Demonstrate contextual problem-solving skills that include setting up and solving problems and interpreting solutions in context.
 - a. Determine linear equations from application problems and solve them.
 - b. Set up a linear proportion from an application problem and solve it.
 - c. Analyze solutions to application problems and give them contextual meaning.
 - d. Determine the three types of outcomes from a system of linear equations in the context of what the graphs look like (terminology about consistent/inconsistent or dependent/independent not emphasized)
 - e. Determine a system of linear equations from an application problem and solve if possible.
6. Apply appropriate problem-solving methods from among algebraic, graphical, and numerical.
 - a. Perform unit conversions.
 - b. Solve linear inequalities in one variable.
 - c. Simplify expressions written in scientific notation.
 - d. Simplify multiplication and division problems using scientific notation.
 - e. Apply solution methods learned to application problems.
 - f. Solve systems of two linear equations graphically and algebraically.
 - g. Solve problems including percent
 - h. Perform operations with radical expressions.
 - i. Perform operations with rational expressions.

- j. Solve absolute value inequalities in one variable.

Completing Math 1215 meets the prerequisites for Math 1130, Math 1350, Math 1220, and some science classes.

Prerequisites and Co-requisites

Appropriate placement score or a grade of C or better in Math 100 or Math 022 or ACT Math \Rightarrow 18 or SAT Math Section \Rightarrow 490 or ACCUPLACER Next-Generation Advanced Algebra and Functions \Rightarrow 228, or QRAS \Rightarrow 248, or Arithmetic \Rightarrow 285 or B+ in Alg II and/or B- or B in Statistics or CRM and/or C or lower in Pre-calculus, Trigonometry, Calculus. Check with your adviser to make sure you meet the requirements.

TECHNICAL SKILLS AND REQUIREMENTS

Skills

To participate and succeed in this class, you will need to be able to perform the following basic technical tasks:

- Use UNM Learn (help documentation located in the "How to Use Learn" link on the left course menu and at [Online Student Documentation](#)).
- Use email – including attaching files, opening files, downloading attachments
- Copy and paste within applications including Microsoft Office
- Open a hyperlink (click on a hyperlink to access a website or online resource)
- Use Microsoft Office applications
- Create, download, update, save and upload MS Word documents
- Download, annotate, save and upload PDF files
- Use Zoom or another web conferencing tool like MS Teams.
- Download and install an application or plugin – may be required for participating in web conferencing sessions

Requirements

- A high-speed Internet connection is highly recommended.
- Supported browsers include: [Detailed Supported Browsers and Operating Systems](#)
- Any computer capable of running a recently updated web browser should be sufficient to access your online course. However, remember that processor speed, RAM, and Internet connection speed can *significantly* affect performance. ***Some programs that use mathematics will not work well on mobile devices such as smartphones or tablets.***
- Microsoft Office products are available free for all UNM students (more information on the [UNM IT Software Distribution and Downloads page](#))

Please update your contact information in Loboweb: [MyUNM Login](#). When you log into MyUNM, Enter LoboWeb. Click on the Personal Information link to make sure your contact information is up to date.

Laptops may be available for checkout for the Fall semester from the [UNM-Valencia Library](#). Contact the librarians for more information.

WEB CONFERENCING, HELP SESSIONS, TECHNICAL SUPPORT

Web conferencing via ZOOM will be used for instructor-led help sessions in this course. For the online sessions, it would be best to have:

- A USB headset with a microphone. Headsets are widely available at stores that sell electronics, at the UNM Bookstore, or online.
- A high-speed internet connection is highly recommended for these sessions. A wireless Internet connection may be used if successfully tested for audio quality before web conferencing.
- You should also dress as you would when attending an in-person class, even if you do not turn on your video camera.

Tutoring at UNM-Valencia

As a dual credit student, you ARE a UNM-Valencia student and so may take advantage of tutoring that is offered at Valencia campus. You may find information about tutoring at this web site: <http://valencia.unm.edu/campus-resources/the-learning-center/learning-center.html>

Instructor-Led Help Sessions – Times and Days

I will be available on most Tuesdays and Thursdays for questions or to help you with this course.

- Tuesday/Thursday 12:00 noon to 2:30 PM
- Zoom room and password:
<https://unm.zoom.us/j/99306957046> HelpMe

Let me know if you need to join the Zoom room by phone instead.

Instructor Response Time

I routinely check the course for postings or emails, Monday (8 am) – Friday (noon), and sometimes on weekends. You can anticipate a 24 to 48-hour response from me, Monday – Thursday. I will try and respond to all weekend (Friday afternoon to Sunday) emails and postings by noon on Monday or earlier. Occasionally I will not log in on Friday mornings, in which case expect to hear from me by the following Monday.

Technical Support

- For UNM Learn Technical Support: (505) 277-0857 (24/7) or use the "Create a Tech Support Ticket" link in your course.
- For UNM-Valencia IT Support: (505)925-8911
- For UNM Web Conference Technical Help: (505) 277-0857

TEXTBOOK AND SUPPLEMENTAL MATERIALS

Required Textbook:

"Developmental Mathematics," 2nd edition, by Sullivan, Struve, Mazzarella.

The pages you will need from this book will be provided in Learn.

COURSEWORK AND PARTICIPATION

Attendance/Participation:

Attendance and participation will count in your overall grade. Your high school teacher will maintain records of your attendance and participation.

High School Homework:

Your high school teacher will assign additional homework. The high school homework will cover other topics and practice from the sections of this course.

Your attendance/participation and work assigned and graded by your high school teacher combined will count as 20% of your overall course grade.

Written Homework:

Each unit will have separate written homework which must be completed no later than indicated on the outline. The purpose of the written homework is to determine if you understand the concepts correctly. You must show **all** of your work, not just give an answer and I will not grade illegible homework. Your score on each will be out of **25 points**. Your written homework average is worth 20% of your overall course grade. **Late homework has a week's grace period and may receive a 20% penalty.**

Projects:

During the semester, each unit will have a project for a total of thirteen small projects. You can work with each other on these projects, but you must let me know who was in your group and you must submit your own written solution. Each project is worth a different amount of points, so refer to the project to know how your score will be determined. Your average on the projects is worth 20% of your overall course grade. **Late projects have a week's grace period and may receive a 20% penalty.**

Exams:

There will be two exams during the semester and one final exam at the end. You will receive a formula sheet for the exams and you can use a stand-alone scientific calculator. You can NOT use your phone or other mobile device for a calculator. You are allowed to take the final **only once**. The combined average of the two in-term exams is worth 20% of the overall course grade, and the final is worth 20% of your overall course grade.

There are two measures to determine if you will pass the course. First, you must score a 70% or better on the final exam. Second, you must have an overall course average of at least 70%. If *either* of these criteria are not met, you will not receive a passing grade for the class.

Netiquette

One of the overriding principles in online conversations is to "craft your responses effectively." It is sometimes difficult to remember that real people are reading posted messages. It is especially true of online communication where others do not have the opportunity to see body language or hear the tone of voice; therefore, misunderstandings are more likely.

Please, follow these guidelines in **all** of your online responses and discussion postings.

- Honor everyone's right to an opinion.
- Respect the right of each person to disagree with others.
- Respond honestly but thoughtfully and respectfully; use language that others will not consider foul or abusive. You may also use emoticons to convey a lighter tone.
- Respect your privacy and the privacy of others by not revealing information that you deem private and which you feel might embarrass you or others
- Be prepared to clarify statements that might be misunderstood or misinterpreted by others.

A Special Note about Anger

Do not send messages that you have written when you are angry, even anonymous ones. In the online world, angry messages are known as "flaming" and are considered bad behavior. Venting and flaming are two different things. It is possible to vent without becoming "ugly." Stick to the facts of what is causing you frustration. Do not send written messages all in upper case; this is the visual equivalent of SHOUTING. It is considered aggressive and is considered bad behavior. If you ever feel like shouting a message, take a deep breath, and wait until you have calmed down before responding. Then, respond calmly and factually.

Notes to Students about participation in a course using UNM Learn:

Tracking Course Activity

UNM Learn automatically records all students' activities, including your first and last access to the course, the pages you have accessed, the number of discussion messages you have read and sent, web conferencing, discussion text, and posted discussion topics. This data can be accessed by the instructor to evaluate class participation and to identify students having difficulty

Submitting Assignments

When you submit an assignment via UNM Learn, you will receive an email receipt of your submission from *do-not-reply@learn.unm.edu*. Save this email as confirmation of your submission.

Grading Procedures

I will attempt to grade all written homework and projects within 24 hours of the final due date. Scanned assignments will be converted to PDF, if not already in that format, and

uploaded to a One Drive folder for you or your high school teacher to access. Please be sure to pay attention to feedback on these assignments! They are to help you succeed in the class and know where you need to do further review before exams.

COURSE GRADE:

Attendance/Participation and High School Homework	20%
Written Homework	20%
Projects	20%
Exams (2)	20%
Cumulative Final Exam*	20%
Total	100%

***There are two measures to determine if you will pass the course. First, you must score a 70% or better on the final exam. Second, you must have an overall course average of at least 70%. If either of these criteria are not met, you will not receive a passing grade for the class**

Grading Scale

Final grades will be based on the weighted average noted above. Percentage of available points

Letter Grade	Final Exam score AND Course Weighted Average
A	70% or better AND 90% or better
B	70% or better AND 80% to 89%
C	70% or better AND 70% to 79%
CR	70% or better AND 70% or better
NC	Less than 70% AND any course average
OR	70% or better AND course average less than 70%

UNM POLICIES

UNM Administrative Mandate on Required Vaccinations

All students, staff, and instructors are required by [UNM Administrative Mandate on Required Vaccinations](#) to be fully vaccinated for COVID-19 as soon as possible, but no later than September 30, 2021, and must provide proof of vaccination or of a UNM validated limited exemption or exemption no later than September 30, 2021 to the [UNM vaccination verification site](#). Students seeking medical exemption from the vaccination policy must submit a request to the [UNM verification site](#) for review by the UNM [Accessibility Resource Center](#). Students seeking religious exemption from the vaccination policy must submit a request for reasonable accommodation to the [UNM verification site](#) for review by the [Compliance, Ethics, and Equal Opportunity Office](#). For further information on the requirement and on limited exemptions and exemptions, see the [UNM Administrative Mandate on Required Vaccinations](#).

UNM REQUIREMENT ON MASKING IN INDOOR SPACES

All students, staff, and instructors are required to wear face masks in indoor classes, labs, studios and meetings on UNM campuses, see [masking requirement](#). Vaccinated and unvaccinated instructors teaching in classrooms must wear a mask when entering and leaving the classroom and when moving around the room. When vaccinated instructors are able to maintain at least six feet of distance, they may choose to remove their mask for the purpose of increased communication during instruction. Instructors who are not vaccinated (because of an approved medical or religious exemption), or who are not vaccinated yet, must wear their masks at all times. Students who do not wear a mask indoors on UNM campuses can expect to be asked to leave the classroom and to be dropped from a class if failure to wear a mask occurs more than once in that class. With the exception of the limited cases described above, students and employees who do not wear a mask in classrooms and other indoor public spaces on UNM campuses are subject to disciplinary actions.

Acceptable masks and mask wearing in class: A two-layer mask that covers the nose and mouth and that is cleaned regularly is acceptable, as are disposable medical masks, KN95, KF94, FFP1 and FFP2 masks. A face shield is not sufficient protection. It is vital that you wear your mask correctly, covering your nose and mouth. Removing your mask for an extended period to eat or drink in class violates the university mask requirement and endangers others.

Consequences of not wearing a mask properly: If you don't wear a mask, or if you do not wear a mask properly by covering your nose and mouth, you will be asked to leave class. If you fail to wear a mask properly on more than one occasion, you can expect to be dropped from the class. If you insist on remaining in the classroom while not wearing a mask, class will be dismissed for the day to protect others and you will be dropped from the class immediately. The instructor will try to have a few disposable masks available in the classroom on a first-come, first-served basis.

Communication on change in modality

The university may direct that classes move to remote delivery at any time to preserve the health and safety of the students, instructor and community. Please check your email and your UNM Learn site regularly for updates about our class, and please check <https://bringbackthepack.unm.edu> regularly for general UNM updates about COVID-19 and the health of our community.

Equal Opportunity and Non-Discrimination

To meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered "responsible employees" by the [Department of Education](#) (see pg. 15). 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](#).

[Read more about campus policy regarding sexual misconduct.](#)

Copyright Issues

All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purpose outside this course.

[The UNM Copyright Guide](#) has additional helpful information on this topic.

Accessibility and Accommodations

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodations of their disabilities.

If you have a disability requiring an accommodation, please contact:

[UNM-Valencia Student Services](#) if you are a Valencia campus student. The phone number is 505-925-8560

[UNM Accessibility Resource Center](#) in 2021 Mesa Vista Hall if you are the main campus student. The phone number is 505-277-3506.

Information about your disability is confidential, and your instructor cannot refer you for accommodations. Be aware that you will need to provide documentation. If you need assistance in obtaining documentation, the offices above can assist you.

Accessibility Statements

[Blackboard's Accessibility statement](#)

[Microsoft's Accessibility statement](#)

Academic Integrity

You should be familiar with UNM's [Policy on Academic Dishonesty](#) and the [Student Code of Conduct](#) which outlines academic misconduct defined as plagiarism, cheating, fabrication, or facilitating any such act.

Drop Policy:

UNM Policies: This course falls under all UNM policies for the last day to drop courses, etc. Please see or the UNM Course Catalog for information on UNM services and policies. Please see the UNM academic calendar for course dates, the last day to drop courses without penalty, and for financial disenroll dates.

I will drop you from this course if you are not keeping up with the deadlines or if you ask me to drop you. I will give you one week notice by email before dropping you from the course.

UNM RESOURCES

[UNM Valencia Campus Tutoring Services](#)

[UNM Main Campus CAPS Tutoring Services](#)

[UNM-Valencia Library](#)

["Life" Resources available to UNM-Valencia Students](#)

SCHEDULE AND DUE DATES NEXT PAGE – SUBJECT TO CHANGE AS NEEDED

Unit	Date	Assignment(s) Due	Topics
Unit 1: Sect. 8.3, 8.4	Tues. 8/17	Sect. 8.3 #105, 113 Sect. 8.4 #55, 83, 73 Project 1	Solving Linear Equations Involving Fractions and Decimals; Classifying Equations; Evaluating Formulas and Solving Formulas for a Variable
Unit 2: Sect. 8.6, 8.8	Thurs. 8/19	Sect. 8.6 #43, 54 Sect. 8.8 #91, 119	Solving Linear Inequalities in One Variable; Problem Solving: Problems Involving Percent
	Tues. 8/24	Project 2 (Visit)	
Unit 3: Sect. 9.1, 9.2, 9.3, 9.4, 9.5	Thurs. 8/26	Sect. 9.1 #65 Sect. 9.2 #123 Sect. 9.3 #71	The Rectangular Coordinate System and Equations in Two Variables; Graphing Equations in Two Variables; Slope; Slope-Intercept Form of a Line; Point-Slope Form of a Line
	Tues. 8/31	Sect. 9.4 #95 Sect. 9.5 #71	
	Thurs. 9/2	Project 3	
Sept. 6 Labor Day			
Unit 4: Sect. 9.6, 10.1	Tues. 9/7	Sect. 9.6 #71, 87	Parallel & Perpendicular lines; Solving Systems of Linear Equations by Graphing
	Thurs. 9/9	Sect. 10.1 #71, 89 Project 4	
Unit 5: Sect. 10.2, 10.3	Tues. 9/14	Sect. 10.2 #53, 56 Sect. 10.3 #69, 71	Solving Systems of Linear Equations Using Substitution; Solving Systems of Linear Equations Using
	Thurs. 9/16	Project 5	
Exam 1	Tues. 9/21	Review (visit)	Unit 1 through 5 topics
	Thurs. 9/23	Exam 1	
Unit 6: Sect. 11.1, 11.2, 11.3, 11.4, 11.6	Tues. 9/28	Sect. 11.1 #121 Sect. 11.2 #79	Adding and Subtracting Polynomials; Multiplying Monomials: The Product and Power Rules; Multiplying Polynomials; Dividing Monomials: The Quotient Rule and Integer Exponents; Applying Exponent Rules: Scientific Notation
	Thurs. 9/30	Sect. 11.3 #139 Sect. 11.4 #105	
	Tues. 10/5	Sect. 11.6 #92 Project 6	
Unit 7: Sect. 12.1, 12.2, 12.3	Thurs. 10/7	Sect. 12.1 #87 Sect. 12.2 #94, 95	GCF and Factoring by Grouping; Factoring Trinomials with Leading Coefficient of 1; Factoring Trinomials with Leading Coefficient other than 1
	Tues. 10/12	Sect. 12.3 #75, 77 Project 7	
October 14 and 15 UNM Fall Break			
Unit 8: Sect. 14.1, 14.2, 14.3, 14.4	Tues. 10/19	Sect. 14.1 #66 Sect. 14.2 #55	Graphs of Equations; Relations; Introduction to Functions; Functions and Their Graphs
	Thurs. 10/21	Sect. 14.3 #55, 57 Sect. 14.4 #37 Project 8	

Unit	Date	Assignment(s) Due	Topics
Unit 9: Sect. 15.2, 12.6, 16.2, 16.5	Tues. 10/26	Sect. 15.1 #75 Sect. 12.6 #79	Square Roots; Solving Polynomial Equations by Factoring; Solving Quadratic Equations by the Quadratic Formula; Graphing Quadratic Functions Using Properties
	Tues. 11/2	Sect. 16.2 #87 Sect. 16.5 #75 Project 9	
Exam 2	Thurs. 11/4	Review (visit)	Unit 1 through 9 topics
	Tues. 11/9	Exam 2	
Unit 10: Sect. 13.1, 13.2, 13.3	Thurs. 11/11	Sect. 13.1 #91 Sect. 13.2 #79 Sect. 13.3 #87	Simplifying Rational Expressions; Multiplying and Dividing Rational Expressions; Adding and Subtracting Rational Expressions with Common Denominators
	Tues. 11/16	Project 10	
Unit 11: Sect. 13.5, 13.7, 14.7	Thurs. 11/18	Sect. 13.5 #87 Sect. 13.7 #41, 43 Sect. 14.7 #91	Adding and Subtracting Rational Expressions with Unlike Denominators; Rational Equations; Absolute Value Equations and Inequalities
	Tues. 11/23	Project 11	
November 25 - 28		Thanksgiving Break	
Unit 12: Sect. 15.2, 15.3, 15.4, 15.8	Tues. 11/30	Sect. 15.2 #141 Sect. 15.3 #35	n th Roots and Rational Exponents; Simplifying Expressions Using the Laws of Exponents; Simplifying Radical Expressions Using the Properties of Radicals; Radical Equations and Their Applications
	Thurs. 12/2	Sect. 15.4 # 137 Sect. 15.8 #99 Project 12	
Unit 13: Sect. 17.2, 17.3	Tues. 12/7	Sect. 17.2 #93 Sect. 17.3 #125	Exponential Functions; Logarithmic Functions
	Thurs. 12/9	Project 13	
Final	Tues. 12/14	Review (visit)	Unit 1 through 13 topics
	Thurs. 12/16	Final Exam	