

MATH 101/102/103: Intermediate Algebra Parts I, II, and III

Fall 2019 (Mastery Class)

Instructor: Ian Burch

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Office and Hours: A123 M/W 8:30 - 9:00, T/Th 9:00 - 10:00

STEM Center M/W 10:15 - 11:30 & 2:45 - 4:00

MATH 101

Sect.	CRN	Class Time	Days	Location	MML Course Code
501	47646	1:30 PM – 2:45 PM	Mon./Wed.	SCC-200	burch71003

MATH 101 COURSE DESCRIPTION: This 1-credit-hour course includes the first third of an Intermediate Algebra course including problems in ratio and proportion, unit conversions, solving linear equations and problems modeled by these, finding equations for lines and graphing them, working with formulas, and scientific notation.

- **Prerequisite/Placement:** Appropriate placement score or a grade of C or better in Math 100 or Math 022 or FYEX 1010 or ISM 100 or ACT Math \Rightarrow 17 or SAT Math Section \Rightarrow 460 or ACCUPLACER Next-Generation Advanced Algebra and Functions =218-238. Check with your adviser to make sure you meet the requirements.
- While MATH 101 provides credit toward establishing a full-time load for financial aid purposes, this course does NOT satisfy UNM general education core course requirements.

MATH 101 COURSE STUDENT LEARNING OUTCOMES:

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

- A. Demonstrate appropriate use of basic function language and notation.
 1. Communicate or present mathematical concepts using correct mathematical notation and terminology.
- A. Convert between equivalent forms of algebraic expressions.
 1. Rewrite line equations in different forms (slope-intercept, point-slope, standard)
- A. Solve single-variable equations of the types listed above.
 1. Solve for a single variable in a proportion.
 2. Solve for a single variable in a linear equation.
 3. Solve for a specified variable in a formula.
- A. Interpret and communicate algebraic solutions graphically and numerically.
 1. Determine equations for lines in the three forms – slope-intercept and point-slope.
 2. Sketch the graphs of linear functions.
 3. Interpret slope in relation to variable coefficients and as a rate of change.
 4. Graph linear inequalities in one variable on a number line and write corresponding interval notation.
- A. Demonstrate contextual problem-solving skills that include setting up and solving problems and interpreting solutions in context.
 1. Determine linear equations from application problems and solve.

2. Set up a linear proportion from an application problem and solve.
 3. Analyze solutions to application problems and give them contextual meaning.
- A. Apply appropriate problem-solving methods from among algebraic, graphical, and numerical.
1. Perform unit conversions.
 2. Solve linear inequalities in one variable.
 3. Simplify expressions written in scientific notation.
 4. Simplify multiplication and division problems using scientific notation.
 5. Apply solution methods learned to application problems.

MATH 102

Sect.	CRN	Class Time	Days	Location	MML Course Code
501	47647	1:30 PM – 2:45 PM	Mon./Wed.	SCC-200	burch37246

MATH 102 COURSE DESCRIPTION: This 1-credit-hour course includes the second third of an Intermediate Algebra course including solving systems of linear equations, exponent rules, factoring polynomials, operations on polynomials, and solving and graphing quadratics. **P**

- Prerequisite/Placement: A grade of C or better in Math 101.
- While MATH 102 provides credit toward establishing a full-time load for financial aid purposes, this course does NOT satisfy UNM general education core course requirements.

MATH 102 COURSE STUDENT LEARNING OUTCOMES:

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

- A. Demonstrate appropriate use of basic function language and notation.
1. Communicate or present mathematical concepts using correct mathematical notation and terminology.
- A. Convert between equivalent forms of algebraic expressions.
1. Simplify expressions using properties of exponents.
 2. Add, subtract, and multiply polynomials.
 3. Factor some types of polynomials.
- A. Solve single-variable equations of the types listed above.
1. Solve quadratic equations using factoring, quadratic formula, and the square root method.
- A. Interpret and communicate algebraic solutions graphically and numerically.
1. Determine when linear equations represent parallel and perpendicular lines.
 2. Sketch graphs of quadratic functions.
- A. Demonstrate contextual problem-solving skills that include setting up and solving problems and interpreting solutions in context.
1. 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)
 2. Determine a system of linear equations from an application problem and solve if possible.
 3. Analyze solutions to application problems and give them contextual meaning.

- A. Apply appropriate problem-solving methods from among algebraic, graphical, and numerical.
1. Solve systems of two linear equations graphically and algebraically.
 2. Apply solution methods learned to application problems.

MATH 103

Sect.	CRN	Class Time	Days	Location	MML Course Code
501	47648	1:30 PM – 2:45 PM	Mon./Wed.	SCC-200	burch75523

MATH 103 COURSE DESCRIPTION: This 1-credit-hour course includes the final third of an intermediate algebra course including simplifying radical expressions including the use of rational exponents, solving radical equations, simplifying rational expressions, operations on rational expressions, solving rational equations, development of the concept of functions, solving absolute value equations and inequalities, and an introduction to exponential and logarithmic functions.

- Prerequisite/Placement: A grade of C or better in Math 102.
- While MATH 103 provides credit toward establishing a full-time load for financial aid purposes, this course does NOT satisfy UNM general education core course requirements.

MATH 103 COURSE STUDENT LEARNING OUTCOMES:

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

- A. Demonstrate appropriate use of basic function language and notation.
1. Communicate or present mathematical concepts using correct mathematical notation and terminology.
 2. Correctly use function notation and vocabulary related to functions.
 3. Determine function values for given domain values and determine domain values for given function values.
 4. Determine domains for specific functions.
- A. Convert between equivalent forms of algebraic expressions.
1. Simplify expressions using properties of exponents.
 2. Simplify rational expressions.
 3. Simplify radical expressions.
 4. Rewrite exponential functions in logarithmic form and vice versa.
- A. Solve single-variable equations of the types listed above.
1. Solve equations containing rational expressions.
 2. Solve equations containing radical expressions.
 3. Solve absolute value equations in one variable.
 4. Solve exponential and logarithmic equations using equating bases.
- A. Interpret and communicate algebraic solutions graphically and numerically.
- B. Demonstrate contextual problem-solving skills that include setting up and solving problems and interpreting solutions in context.

1. Analyze solutions to application problems and give them contextual meaning.
- A. Apply appropriate problem-solving methods from among algebraic, graphical, and numerical.
 1. Perform operations with radical expressions.
 2. Perform operations with rational expressions.
 3. Solve absolute value inequalities in one variable.
 4. Apply solution methods learned to application problems.

Completing Math 101 and 102 meets the prerequisites for Math 1110 and Math 1350. Completing all three (Math 101, 102, and 103) meets the prerequisites for Math 1220 and some science classes. Completing all three, Math 101, 102, and 103, meets the same learning objectives as Math 1215.

MATH 106 and MATH 1996 Companion Courses: These two courses provide support for students who need additional scheduled time to work with an instructor on the material in this course. Ask your instructor about availability of these companion courses.

ALL COURSES: MATH 101/102/103

COURSE MATERIALS:

Textbook: “Developmental Mathematics,” 2nd edition, by Sullivan, Struve, Mazzarella.

- **Required:** Appropriate MyMathLab (MML) access code (do not purchase a generic code, in this case the code is book specific). You may purchase the 18-week access code for a lower price, but you *cannot* upgrade to the lifetime code once you purchase the restricted one.

Do not purchase an access code that gives you fewer than 18 weeks access.

- **Optional:** You may “upgrade” your access by purchasing a hardcopy of the book directly from Pearson for an additional cost (between \$50 and \$60 before tax).
- There will be copies of the book on reserve for use in the library (you will not be able to take the book from the library home). ***Be sure to request which chapter you need when checking out the book.***

Other Requirements:

- Reliable access to a computer or tablet and Internet. ***A computer (laptop or desktop) is recommended.*** Preferred browsers are Chrome, Firefox, or Safari. Preferred operating systems are Windows or Apple. Some applications in MyMathLab work best while using Google Chrome.
- Administrative rights to download free software or plug-ins or add-ons on the computer you plan to use for this course. The first time you login to the MyMathLab (MML)

homepage, run the Installation Wizard to make sure you have all the appropriate software installed. ***Also, make sure you are allowing popups.***

- Pearson account. If you have used any of the Pearson My Lab products before, you can use the same account you created the first time you used it. Otherwise, you can create an account when you register in MyMathLab (MML) for this class. Register by going to mymathlab.com.
- Access to UNM Learn. will use your UNM NetID to log into UNM Learn. You may access it directly via learn.unm.edu
- Standard or Scientific calculator. This ***cannot*** be an app on your cell phone or mobile device.
- Adobe Reader (a free download), preferably version 11.0 or better.

EXPECTATIONS: Students are expected to conduct themselves in a polite, courteous, professional and collegial manner. Cell phones must be *set on silent* and *be out of sight* during class. No food or drink is allowed in computer labs. If you would like to have water with you, be sure it is in a closed container that will not spill.

Time for This Course: For this course plan to spend a *minimum* of 9 to 12 hours per week ***in addition to class time.*** There is no guarantee you will pass if you dedicate this amount of time, you still need to learn the material and use your time wisely, but those who pass generally are the ones who spend the time needed to do the work to learn the material. ***Also, a portion of your Participation Grade will be determined by the amount of time you are working on the course materials each week.***

Binder: You should purchase a 3-ring binder in which to keep your completed and graded papers including

- Guided Notes (can serve as reference while you are working on the computational assignments and unit quizzes)
- Notes taken while working the Computation Assignments
- Written and graded Quizzes (use these to study for the final exam)

Your graded Quizzes will serve as your review for the final exam.

COURSE GRADE:

Your Course Grade in each class, Math 101, 102, and 103, will be determined by a weighted average of the grades you earn in each category listed below.

- | | |
|------------------------------|------------|
| • Participation and Progress | 10% |
| • Guided Notes | 20% |
| • Computational Assignment | 10% |
| • Unit Quizzes | 20% |
| • Project | 10% |
| • Departmental Final* | <u>30%</u> |
- (Cumulative for Math 102 and 103)*

TOTAL

100%

YOU MUST SCORE AT LEAST A 70% ON THE FINAL EXAM AND HAVE A COURSE AVERAGE OF 70% TO PASS!

GRADING SCALE:

Depending on the grading option you have chosen, your final course letter grade will be determined as shown below.

Letter Grade	Overall Course Points/Course Average
A	70% or better on final <i>and</i> 90% or more weighted course average
B	70% or better on final <i>and</i> 80% to 89% weighted course average
C	70% or better on final <i>and</i> 70% to 79% weighted course average
CR	70% or better on final <i>and</i> 70% or better weighted course average
D+	Less than 70% on final <i>and</i> 70% or better weighted course average
D	Any score on final <i>and</i> 60% to 69% weighted course average
F	Any score on final <i>and</i> less than 60% weighted course average
NC	Any score on the final <i>and</i> less than 70% weighted course average OR less than 70% on the final exam

ATTENDANCE/PARTICIPATION/PROGRESS:

You are expected to be *on time* to each class and stay the *entire* class, have the necessary course materials on hand, and be working on the assignments for this class to receive full credit for attendance each day. You are also expected to work on your unit assignments outside of class time (see Time for This Course). I will be checking your progress regularly and the time you spend working outside of class will count as part of your participation grade.

Absences: I do not require you to give me any sort of documentation for missing up to 3 class days. Even if you miss class, you are still expected to complete the assignments posted in MML.

Here are the reasons I may drop you from the class:

- If you miss the first week of the semester.
- If you have 3 or more absences during the first three weeks of the semester.
- If you are not registered in MML and completing assignments by the end of the first week you are in the class.

If you added late, your counted absences start the day you registered for the class.

Do not expect me to drop you. If you decide you cannot fulfill the requirements for this class and want to drop yourself, be sure to process a drop (either online or with a form at the Registrar's office).

GUIDED NOTES: These are notes you should print and complete using your text. After the first day of class, these notes will be posted in either UNM Learn or your instructor may upload them in the Document Sharing folder in MML. Completed notes will be due at the end of the unit and must be turned in by the required due date for that unit whether you have completed them or not. Embedded in the Guided Notes will be the password to open the corresponding Computational Assignment in MML. Your score on each set of Guided Notes will be out of **10 points**. You will be allowed to complete/correct these Guided Notes after the due date for half of the missing points.

COMPUTATIONAL ASSIGNMENTS: The Computational Assignments are where you practice the concepts you need to learn. Linked to many questions are Skill Builder problems. If you are struggling with a problem, the program will direct you to simpler, Skill Builder problems to practice, helping pinpoint where you are having difficulty. Be sure to work the Skill Builder problems linked to those you struggle with.

You will need a password from your Guided Notes to be able to open your Computational Assignments.

It is a good idea to organize your notes and “scratch” work created while completing the Computational Assignments. You may want to do this in a spiral notebook or have a place in your binder for these papers.

You will need to score a 90% or better on the Computational Assignment before the Unit Quiz will open.

QUIZZES and UNIT DEADLINES: There is a Quiz for each unit and there are target deadlines and required deadlines for each unit. The target deadlines are ones you should try to maintain in order to finish more than one course during the semester. The required deadlines will allow you to complete the course you are currently registered in.

Quizzes in MML

- The online quiz for a unit in MML will not open until you have scored 90% or better on the corresponding Computational Assignment.
- If you are ready to attempt a unit quiz before the required deadline, you may do so in MyMathLab. The quiz in MML is timed. If you score an 85% or better on that quiz, you can continue to the next unit.

Written, in-class quizzes:

- If you have not completed the online quiz by the required deadline, or, if you did not score 85% or better in the online quiz, you will take a written quiz in class.
- You will take the unit quiz on the required deadline whether or not you have completed the homework assignments for that unit. ***Pay attention to the deadlines and do not delay working on the assignments for each unit.***

Sometimes MML will count a problem incorrect because you do not enter the answer in the form the program wants or for some other reason not immediately apparent. I will check your progress before each class meeting and will review your unit quizzes to see if you can receive some points back. If you complete a Quiz and your score is really close to 85%, tell me and I will look at it sooner rather than later.

DO NOT consider any of the grades posted in MyMathLab as representing your actual grade.

PROJECTS: There will be one project for you to complete in each class (Math 101, 102, and 103). It will show up on the schedule in the unit corresponding to the concepts addressed. **This project may be completed in groups, if you have permission from me ahead of time. *If you do not ask for permission to complete the project in a group, and I receive papers from two or more people that are nearly identical, all the parties involved may receive a 0 for the project.*** The purpose of this project is to ensure you understand how to apply the mathematical concepts from that unit, so everyone will approach the stated problem in a slightly different way. Make sure, even if you work in a group, that the project solution you turn in is your best work. The Project grade will be your percent earned out of 100%.

FINAL EXAM: The final is a departmental exam that will test you over all, or nearly all, of the learning objectives for this course. You must take the final in class or in the Testing Center. You can take the final ***only once***. You must score a 70% or better on the Final Exam to earn a passing grade in this class. ***You must also have a 70% course average to earn a passing grade,*** but if you have been attending class, completing assignments, and showing progress, this should not be a problem.

SUPPORT: If you are struggling in this course, do not be afraid to ask for help!

- Ask My Instructor: Please use the Ask My Instructor button in MyMathLab. This button is available in the MML homework and sends a message to my email with a link to the question. Do not just send the link, tell me where in the problem you are struggling.
- Office Hours: See my office hours listed at the beginning of this syllabus. Feel free to come by, log in for online office hours (if available), or make an appointment to get help.
- Study Groups: You may work together with other members of our class. However, if there is an assignment that is to be submitted individually, that assignment should be your work not copies from your group. ***For example, if I receive Guided Note submissions from two or more people that are identical, all students involved will receive a zero for that assignment.***
- SI Tutors: There may be schedule SI tutoring sessions to help you with topics specific to this course. Check in the Learning Commons/Math Center for a schedule.
- Free Tutoring: The Math Center at Valencia campus has free tutoring and open labs. Call 505-925-8907 for more information. CAPS on main campus also provides tutoring if you live in Albuquerque or are at main campus.
- Student Services: There are various services provided in our Student Services Department. See below about equal access. Also, we have a testing center, advising, and career placement available: [Valencia Student Services](#)

OTHER IMPORTANT INFORMATION:

ABSOLUTELY NO FOOD is allowed in the computer labs. Drinks are only allowed if they are in sealed containers with tightly fitting lids that will not spill.

Equal Access: In accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as I am not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow. Contact Accessibility Resource Center at 277-3506 for additional information.

If you need an accommodation based on how course requirement interacts with the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the appointment we can discuss the course format and requirements, anticipate the need for adjustments and explore potential accommodations. I rely on the Disability Services Office for assistance in developing strategies and verifying accommodation needs. If you have not previously contacted them I encourage you to do so.

If you are a Valencia campus student, contact Equal Access Services at Valencia Campus, Jeanne Lujan at (505)925-8910 or [Valencia Student Services](#). If you are a main campus student you can receive documentation from the main campus Accessibility Resource Center. I will not guarantee accommodation without the appropriate documentation.

Collegial Behavior: Since I assume you are all adults, I will expect from you respectful adult behavior. Engaging in disruptive or unruly behavior could result in your being asked to leave, at which time you will be counted absent and a referral will be sent to the Associate Dean of Student Services. Continuing to behave in this way could result in your being dropped from the course. Disruptive or unruly behavior includes but is not limited to:

- texting or talking on your cell phone at any time during class,
- continually talking with your neighbor when we are not working on a group activity,
- working on homework from another class,
- reading material or watching media on a mobile device not related to this course or at a time that is inappropriate,
- refusing to participate in the class activities.

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:

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.

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.

Title IX Statement: 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 pg. 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>

IMPORTANT DATES:

- August 30, before 5:00 PM MT – Last day to add or change grade mode
- September 2 – Labor Day Holiday
- September 6, before 5:00 PM MT – Last day to add with form or drop without a grade
- October 10-11 – Fall Break
- November 8, before 5:00 PM MT – Last day to drop without Dean’s permission
- November 28-29 – Thanksgiving Holiday
- December 6, before 5:00 PM MT – Last day to drop with Dean’s permission and change grade mode with form

Math 101: Intermediate Algebra Part 1 M/W Schedule (*Schedule is subject to change*)

By the Quiz Date (or target date)

- your Guided Notes for the unit are due
- you should have a 90% or better on the Computational Assignment for that unit.

If you wish to take your unit quiz online, you must do so by 11:59 PM on the day before the Quiz Date.

Unit	Quiz Date	Target Date for Math101/102 Only	Target Date (All)
1	Monday, Sept. 9	Wednesday, Aug. 28	Sunday, Aug. 25
2	Monday, Sept. 30	Sunday, Sept. 8	Sunday, Sept. 1
3	Monday, Oct. 21	Wednesday, Sept. 18	Sunday, Sept. 8
4	Monday, Nov. 11	Sunday, Sept. 29	Sunday, Sept. 15
5	Monday, Dec. 2	Wednesday, Oct. 9	Sunday, Sept. 22

Math 101 Project is due Monday, Sept. 9.

Math 102: Intermediate Algebra Part 2 M/W Schedule (*Schedule is subject to change*)

By the Quiz Date (or target date)

- your Guided Notes for the unit are due
- you should have a 90% or better on the Computational Assignment for that unit.

If you wish to take your unit quiz online, you must do so by 11:59 PM on the day before the Quiz Date.

Unit	Quiz Date	Target Date for Math102/103 Only	Target Date (All)
6	Monday, Sept. 9	Wednesday, Sept. 4	Sunday, Oct. 6
7	Wednesday, Oct. 2	Wednesday, Sept. 18	Sunday, Oct. 13
8	Wednesday, Oct. 23	Sunday, Sept. 29	Sunday, Oct. 20
9	Monday, Nov. 25	Sunday, Oct. 6	Sunday, Oct. 27

Unit Target Date for Math101/102 Only

6	Sunday, Oct. 27
7	Wednesday, Nov. 6
8	Sunday, Nov. 24
9	Wednesday, Dec. 4

Math 102 Project is due Wednesday, Oct. 2.

Math 103: Intermediate Algebra Part 3 M/W Schedule (*Schedule is subject to change*)

By the Quiz Date (or target date)

- your Guided Notes for the unit are due
- you should have a 90% or better on the Computational Assignment for that unit.

If you wish to take your unit quiz online, you must do so by 11:59 PM on the day before the Quiz Date.

Unit	Quiz Date	Target Date for Math102/103 Only	Target Date (All)
10	Monday, Sept. 9	Sunday, Oct. 27	Sunday, Nov. 10
11	Wednesday, Oct. 2	Wednesday, Nov. 6	Sunday, Nov. 17
12	Wednesday, Oct. 23	Sunday, Nov. 24	Sunday, Nov. 24
13	Monday, Nov. 25	Wednesday, Dec. 4	Sunday, Dec. 1

Math 103 Project is due Monday, Sept. 9.