MATH 101/102/103: Intermediate Algebra Parts I, II, and III
Spring 2019 (Mastery Class)

Instructor: Greg Barnett
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Phone: 505-925-8635
OFFICE HOURS: Tuesday and Thursday, 3:00-4:00 in the Math Center/LRC

Math 101				
Section	**Class Time**	**Meeting Days**	**Meeting Location**	**MML Course Code**
501	9:00am – 11:45am	T/R	**SCC-200**	barnett04038

MATH 101 COURSE DESCRIPTION: This 1 cr. hr. 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, exponent rules, working with scientific notation, and operations on polynomials.
Prerequisite: Appropriate placement score or a grade of C or better in Math 100 or Math 022. Check with your adviser to make sure you meet the 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.
B. Convert between equivalent forms of algebraic expressions.
   1. Simplify expressions using properties of exponents.
   2. Add, subtract, and multiply polynomials.
   3. Rewrite line equations in different forms (slope-intercept, point-slope, standard)
C. 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.
D. Interpret and communicate algebraic solutions graphically and numerically.
   1. Determine equations for lines in the three forms – in particular 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.
E. 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.

F. 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				
Section	**Class Time**	**Meeting Days**	**Meeting Location**	**MML Course Code**
501	9:00am – 11:45am	T/R	**SCC-200**	barnett19505

MATH 102 COURSE DESCRIPTION: This 1 cr. hr. course includes the second third of an Intermediate Algebra course including solving systems of linear equations, factoring polynomials, simplifying radicals, and solving and graphing quadratics.
Prerequisite: A grade of C or better in Math 101.

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.
B. Convert between equivalent forms of algebraic expressions.
    1. Simplify expressions using properties of exponents.
    2. Factor some types of polynomials.
    3. Simplify radical expressions.
C. Solve single-variable equations of the types listed above.
    1. Solve quadratic equations using factoring, quadratic formula, and the square root method.
D. Interpret and communicate algebraic solutions graphically and numerically.
    1. Determine when linear equations represent parallel and perpendicular lines.
    2. Sketch graphs of quadratic functions.
E. 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. Find quadratic equations from application problems and solve.
    4. Analyze solutions to application problems and give them contextual meaning.
F. 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				
Section	**Class Time**	**Meeting Days**	**Meeting Location**	**MML Course Code**
501	9:00am – 11:45am	T/R	**SCC-200**	barnett72657

MATH 103 COURSE DESCRIPTION: This 1 cr. hr. 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: A grade of C or better in Math 102.

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.
B. 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.
C. 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.
D. Interpret and communicate algebraic solutions graphically and numerically.
    1. Sketch the graphs of exponential and logarithmic functions (without transformations).
E. 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.
F. 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 129 and Statistics 145. Completing all three (Math 101, 102, and 103) meets the prerequisites for Math 121 and some science classes.

MATH 106 and Math 193 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. See the UNM Valencia class schedule for course information.

COURSE MATERIALS:
Textbook: "Developmental Mathematics," 2nd edition, by Sullivan, Struve, Mazzarella.

> <u>**Required:**</u> Appropriate MyMathLab (MML) access code (do not purchase a generic code, in this case the code is book specific). ***It is recommended that you purchase the lifetime code.*** 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. Course IDs are listed above for each course.
> <u>**Optional:**</u> 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 paper copies of the book on reserve for use in the library (you will not be able to take home the book from the library). The books on reserve are bound in individual sections of two to four chapters. ***Be sure to request which chapter you need when checking out the book.***
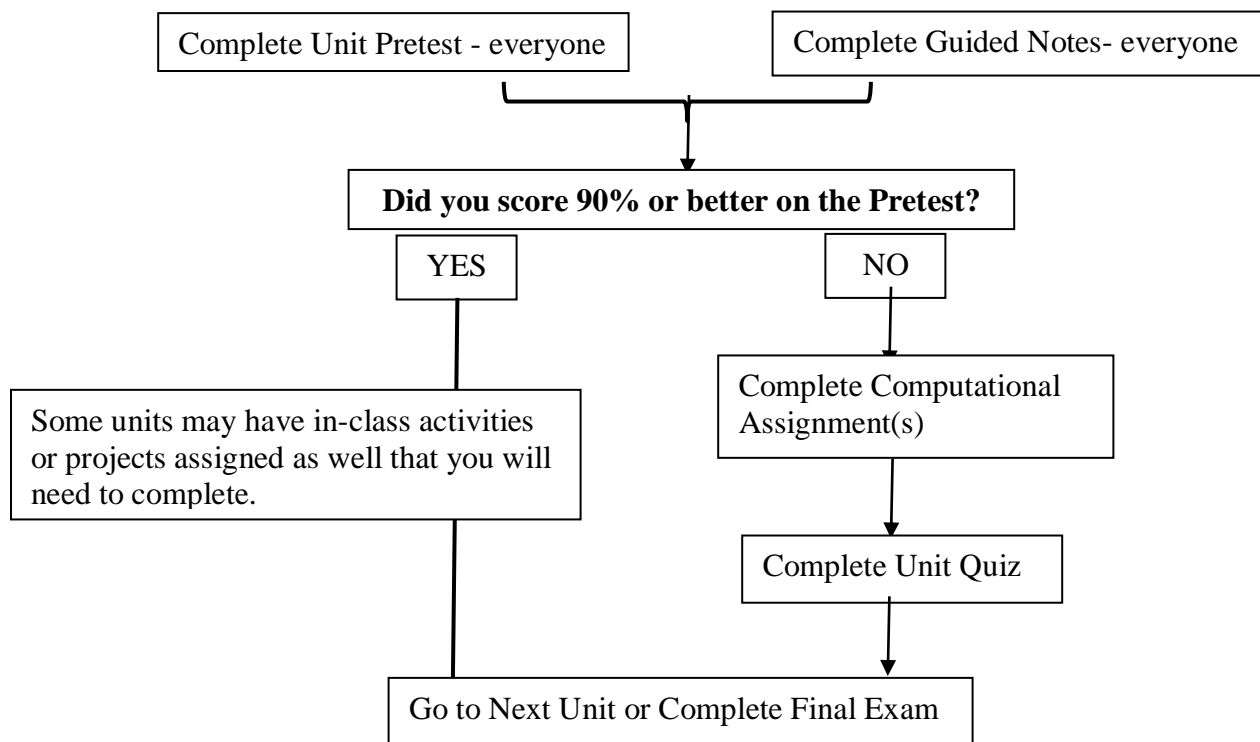
OTHER REQUIREMENTS:
- Reliable access to a computer or tablet and Internet. ***A computer (laptop or desktop) is recommended.*** Preferred browsers are Chrome, Firefox, or Safari. Preferred operating systems are Windows or Apple. Some applications in MyMathLab work best while using Google Chrome.
- Administrative 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
- 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.

TIME FOR THIS COURSE: Plan to spend a *minimum* of 9 to 12 hours per week for this class. 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.***

HOW TO COMPLETE YOUR WORK FOR THIS CLASS:
The course topics are split into units, some units will have a Part A and a Part B. Below is how you can progress through the material:

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┌──────────────────────────────────┐        ┌──────────────────────────────────┐
│  Complete Unit Pretest - everyone │        │  Complete Guided Notes- everyone │
└──────────────────────────────────┘        └──────────────────────────────────┘
                         │                           │
                         └───────────┬───────────────┘
                                     ▼
              ┌───────────────────────────────────────────────┐
              │  Did you score 90% or better on the Pretest?   │
              └───────────────────────────────────────────────┘
                    ┌────────┐                    ┌────────┐
                    │  YES   │                    │   NO   │
                    └────────┘                    └────────┘
                         │                              │
                         │                              ▼
┌────────────────────────────────────────┐   ┌──────────────────────────────┐
│ Some units may have in-class activities │   │  Complete Computational      │
│ or projects assigned as well that you   │   │  Assignment(s)               │
│ will need to complete.                  │   └──────────────────────────────┘
└────────────────────────────────────────┘                  │
                         │                                   ▼
                         │                       ┌──────────────────────────┐
                         │                       │   Complete Unit Quiz     │
                         │                       └──────────────────────────┘
                         │                                   │
                         ▼                                   ▼
              ┌─────────────────────────────────────────────────────┐
              │   Go to Next Unit or Complete Final Exam            │
              └─────────────────────────────────────────────────────┘
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PRETEST: At the beginning of each unit you will complete a pretest in MML. ***The pretest is timed (60 minutes) and must be taken in class or at designated times in the Math Center.*** You are given 2 attempts to demonstrate mastery of those concepts. If you score 90% or better on the Pretest, then, once you complete the Guided Notes for the unit and any possible activities or projects, you can move on to the next unit. If you do not score 90% or better on the Pretest, that just means there are concepts in the unit you do not yet know. Your Quiz score at the end of the unit will replace your Pretest score. There are 5 units in Math 101, 4 units in Math 102, and 4 units in Math 103. Each Pretest/Quiz is worth 10 points each. Your points will be your score as a percent shown in MML times 10.

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 before you start the Computational Assignment or before you take the Pretest for the next unit. If the notes come in Parts A and B, then Part A is due before you start working on the Part A Computational Assignment. Similarly, for Part B. Embedded in the Guided Notes will be the password to open the corresponding Computational Assignment in MML. Your score on each will be out of **10 points.**

BINDER: You should purchase a 3-ring binder in which to keep your completed and graded Guided Notes, Unit Activities, and Project(s). Your guided notes in particular can serve as reference while you are working on the computational assignments and when you are studying for the final exam.

Also, in your binder, keep the formula sheet you will create to use with your final exam as well as other important classwork.

COMPUTATIONAL ASSIGNMENTS: The Computational Assignments are where you practice the concepts you need to learn. Depending on how you did on your Pretest, there may be some problems already checked off as completed in the Computational Assignments. These are the ones you showed mastery of on your Pretest. For those you need to complete, 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.

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, or on both Parts A and B if there are two parts, before the Unit Quiz will open.

QUIZZES: There is a Quiz for each unit. The quizzes are NOT timed, but you should count on only 2 attempts. The quiz for a unit will not open until you have scored 90% or better on the corresponding Computational Assignment(s). You need to score 90% or better on each Quiz to move on to the next Unit Pretest or to prepare for the final exam. Your Quiz score will replace your Pretest score for that unit. If you do not score 90% or better on the Quiz, the program will generate a Companion Study Plan that will provide you more practice on the concepts you missed. You will need to show mastery in the Study Plan (yes, that 90% again) before the second attempt on the Quiz will open. To show mastery in the Study Plan, you will need to complete the Quiz Me quizzes for the objectives you are practicing. **Each Pretest/Quiz is worth 10 points each**. Your points will be your score as a percent shown in MML times 10.

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 approximately every week and will review your unit pretests and quizzes to see if you can receive some points back. If you completed a Pretest or Quiz and your score is really close to that 90%, 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.

PARTICIPATION AND PROGRESS: Participation includes
- <mark>Attendance.</mark> Show up to class!
- <mark>Activity. We will be doing a short group activity during most class meeting times.</mark>
- Questions. Bring your questions from the homework. My job is to help you learn the material, I cannot do that unless I know where you are misunderstanding or "not getting it."
- Show Progress. Come to class with Guided Notes done or partially done, come with questions from the Computational Assignments, come with a score of 90% on a Quiz to show you are ready for your next Pretest. I will also generate time and progress reports from your work in MML. ***You need to work on this course throughout the week, not just during class time, so you can log your 9 to 12 hours per week.***

You will receive **10 Participation/Progress Points** for every class day you are present, ask questions, and show progress. <mark>Also, each In-Class Activity is worth **10 Participation/Progress Points**.</mark>

Number of Participation Points for your final course grade: Since this is a mastery class and some students need more time to master concepts they have not learned before, the number of possible points you earn in this category can vary. The possible points will ***be 10 times the number of class days before you take the final exam plus 10 times the number of in-class activities we did*** (whether you were in class or not). The first week of classes does not count in this total, for either possible or earned points. However, see below about missing class.

Absences: <mark>I do not require you to give me any sort of documentation for up to three (3) absences, they will be automatically excused. However, even if you miss class, you are still expected to show progress (see above). Also, be sure to ask about any in-class activity we did on the day(s) you missed. Once you have used up your three absences, you cannot have any more absences excused.</mark>

If you have not completed Unit 1 in Math 101 or Unit 6 in Math 102 or Unit 10 in Math 103 by Friday, February 1st, YOU MAY BE DROPPED!

If you have not completed Unit 2 in Math 101 or Unit 7 in Math 102 or Unit 11 in Math 103 by Friday, March 8th, YOU MAY BE DROPPED!

<mark>Here are the other reasons I *may* drop you from the class:</mark>
- <mark>If you miss the first week of the semester or the first week after you register for the class.</mark>
- <mark>If you have 3 or more absences during the first three weeks of the semester.</mark>

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).

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. <mark>This project may be completed in groups, if you have permission from me ahead of time</mark>*. **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 are allowed to 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.

COURSE GRADE:
Your Course Grade will be determined by a weighted average of the grades you earn in each category listed below.

- Participation and Progress   20%
- Guided Notes   20%
- Unit Pretests/Quizzes in MML   20%
- Project   10%
- Departmental Final   30%
  (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 earn a passing grade in each course.

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

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
D+	Less than 70% **AND** 70% or better
D	Any **AND** 60% to 69%
F	Any **AND** Less than 50%
NC	Any **AND** 69% or less

Math 101 Possible Points: There are 5 units in Math 101. See the number of possible points in each course grade category below.

- Participation and Progress   varies
- Guided Notes   90 points possible
- Unit Pretests/Quizzes in MML   50 points possible
- Project   100 points possible
- Departmental Final   100 points possible

Math 102 Possible Points: There are 4 units in Math 102. See the number of possible points in each course grade category below.

- Participation and Progress   varies
- Guided Notes   70 points possible
- Unit Pretests/Quizzes in MML   40 points possible
- Project   100 points possible
- Departmental Final (Cumulative – includes concepts from M101)   100 points possible

Math 103 Possible Points: There are 4 units in Math 103. See the number of possible points in each course grade category below.

- Participation and Progress   varies
- Guided Notes   70 points possible
- Unit Pretests/Quizzes in MML   40 points possible
- Project   100 points possible
- Departmental Final (Cumulative – includes concepts from M101/102)   <u>100 points possible</u>

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 computational assignments and in the quizzes 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 or log in for online office hours or make an appointment to get help.
- Form study groups: You may work together with other members of our class. However, for your Guided Notes and other work meant to be done individually, if they are too much alike, all parties involved will lose points. ==***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.***==
- 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 for which I can get documentation.
- 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 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