



## Course Syllabus

### NCBM 0101 – Non-Course-Based Intermediate Algebra

#### Catalog Description:

A study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations.

**Lecture hours = 0, Lab hours = 1**

**Prerequisites:** Placement Examination or Advising

**Co-Requisite:** Math 1314

**Semester Credit Hours:** 1

**Lecture Hours per Week:** 0

**Lab Hours per Week:** 1

**Contact Hours per Semester:** 16

**State Approval Code:** 32.0104.54.19

#### Class section meeting time:

**Alternate Operations During Campus Closure:** In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website ([www.panola.edu](http://www.panola.edu)) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

#### Artificial Intelligence (AI) Course Policy:

There are situations throughout the course where you may be permitted to use artificial intelligence (AI) tools to aide in further understanding of mathematical concepts. However, AI tools may not be used for any graded assignments including but not limited to exams, quizzes, and projects. Use of any AI-generated content in this course without the instructor's consent qualifies as academic dishonesty and violates Panola College's standards of academic integrity.

#### Core Components and Related College Student Learning Outcomes

This course counts as part of the academic requirements of the Panola College Core Curriculum and an Associate of Arts or Associate of Science degree.  Yes  No

#### Instructional Goals and Purposes:

The purpose of this Non-Course-Based Option (NCBO) lab course is to increase academic proficiency in expression of mathematical solutions, mathematical reasoning, and mathematical understanding. This lab is taken along with a credit-level mathematics course—MATH 1314-College Algebra. It is designed to support the development of math skills needed to complete the credit-level course successfully.

**Technical Skill Requirements:**

- Use a web browser
- Access and use Canvas Learning Management System (LMS)
- Use email within Canvas LMS to communicate with instructor
- Send an email attachment
- Download appropriate files
- Upload files to Canvas LMS
- Access and use online lab software (manage account name and password)
- Use a calculator

**Learning Outcomes:** (from the ACGM catalog; aligned with Texas College and Career Readiness Standards for Mathematics)

After studying the material presented in course, the student will be able to:

1. Define, represent, and perform operations on real and complex numbers.
2. Recognize, understand, and analyze features of a function.
3. Recognize and use algebraic (field) properties, concepts, procedures (including factoring), and algorithms to combine, transform, and evaluate absolute value, polynomial, radical, and rational expressions.
4. Identify and solve absolute value, polynomial, radical, and rational equations.
5. Identify and solve absolute value and linear inequalities.
6. Model, interpret and justify mathematical ideas and concepts using multiple representations.
7. Connect and use multiple strands of mathematics in situations and problems, as well as in the study of other disciplines.

**Course Content:**

Students in all sections of this course will be able to:

1. Numeric Reasoning
  - a. Perform computations with real and complex numbers.
  - b. Define and give examples of complex numbers.
2. Algebraic Reasoning
  - a. Explain and differentiate between expressions and equations using words such as “solve”, “evaluate”, and “simplify”.
  - b. Recognize and use algebraic field properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (absolute value, polynomial, radical, and rational expressions).
  - c. Explain the difference between the solution set of an equation, the solution set of a system of equations, and the solution set of an inequality.
  - d. Recognize and use algebraic field properties, concepts, procedures, and algorithms to solve equations (including absolute value, polynomial, radical, and rational equations) and inequalities (including linear and absolute value).
  - e. Interpret multiple representations of equations and relationships.
  - f. Translate among multiple representations of equations and relationships.
3. Geometric Reasoning
  - a. Apply properties of geometric figures to solve problems.
  - b. Make connections between geometry and algebra.
4. Measurement Reasoning
  - a. Find the perimeter and area of two-dimensional figures.
  - b. Find volume of three-dimensional figures.
5. Functions
  - a. Recognize whether a relation is a function.
  - b. Recognize and distinguish between linear and quadratic functions.
  - c. Understand and analyze features of a function.
  - d. Algebraically construct and analyze linear and quadratic functions.
  - e. Apply linear and quadratic function models to real-world situations.

- f. Develop a linear or quadratic function to model a situation.
- 6. Problem Solving
  - a. Analyze given information, formulate a plan or strategy, determine a solution, justify the solution, and evaluate the problem-solving process.
  - b. Formulate a solution to a real-world situation based on the solution to a mathematical problem.
  - c. Use a function to model a real-world situation.
- 7. Communication and Representation
  - a. Use mathematical symbols, terminology, and notation to represent given and unknown information in a problem.
  - b. Use mathematical language to represent and communicate the mathematical concepts in a problem.
  - c. Use mathematics as a language for reasoning, problem solving, making connections, and generalizing.
  - d. Model and interpret mathematical ideas and concepts using multiple representations.
  - e. Summarize and interpret mathematical information provided orally, visually, or in written form within the given context.
  - f. Communicate mathematical ideas, reasoning, and their implications using symbols, diagrams, graphs, and words.
  - g. Create and use representations to organize, record, and communicate mathematical ideas.
  - h. Explain, display, or justify mathematical ideas and arguments using precise mathematical language in written or oral communications.
- 8. Connections
  - a. Connect and use multiple strands of mathematics in situations and problems.
  - b. Connect mathematics to the study of other disciplines.

**Methods of Instruction/Course Format/Delivery:**

This course may be offered in a computer lab in face-to-face or hybrid format or may be offered online. In the event of an emergency where face-to-face instruction cannot be provided, the course materials and activities may be moved to an online format for course completion.

Methods of instruction will include activities needed to support individual skill development. Online homework will be assigned in online lab software. The student is expected to work at least 16 hours per semester in the online lab software.

**Major Assignments / Assessments:**

The following items will be assigned and assessed during the semester and will be used to calculate the final grade for the course.

Assignments:

- Online assignments in lab software—individualized based on diagnostic testing
- Supplemental assignments to support achievement in co-requisite credit-level class as needed

**Course Grade:**

For developmental courses like this lab, a grade of C (70%) or higher must be achieved for course credit. This course requires at least one hour of study time per week.

Assignment Weight:

- Completion of individual Study Plan – 100%
- OR**
- Grade of C or higher in co-requisite credit-level course – 100%

Grades for the course will be assigned as follows:

- 70-100% = Pass
- Below 70% = Fail

A grade of Pass for this lab course will be assigned if the student achieves a grade of C or higher in the co-

requisite credit-level class.

### **TSI Completion Requirements for NCBM 0101**

To achieve TSI Met status students must complete the Study Plan with a 70% mastery of objectives assigned in the Plan. Students who achieve a grade of C or higher in the co-requisite credit-level math course will automatically achieve TSI Met status.

### **Texts, Materials, and Supplies:**

- Panola College EdReady (This is included with registration of the course.)
- Access to Canvas LMS (Provided by Panola College)
- Desmos Scientific Calculator (no purchase necessary)
- Other materials as assigned by the instructor

### **Other:**

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: <https://www.panolacollegestore.com>
- For testing services, use the following link: <https://www.panola.edu/student-services/student-support/academic-testing-center>
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to <https://www.panola.edu/student-services/student-support/disability-support-services> for more information.
- Panola College welcomes pregnant and parenting students as a part of the student body. This institution is committed to providing support and adaptations for a successful educational experience for pregnant and parenting students. Students experiencing a need for accommodations related to pregnancy or parenting will find a Pregnancy and Parenting Accommodations Request form in *The Pathfinder* or may request the form from the course instructor.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder*: <https://www.panola.edu/> (located at the bottom under students)