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:

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 X No: If no, skip to Instructional Goals.

The items below marked with an X reflect the state-mandated outcomes for this course IF this is a CORE course:

☐ Critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information
  ☐ CT1: Generate and communicate ideas by combining, changing, or reapplying existing information
  ☐ CT2: Gather and assess information relevant to a question
  ☐ CT3: Analyze, evaluate, and synthesize information

☐ Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
  ☐ CS1: Develop, interpret, and express ideas through written communication
  ☐ CS2: Develop, interpret, and express ideas through oral communication
  ☐ CS3: Develop, interpret, and express ideas through visual communication

☐ Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion
EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion

Teamwork – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
TW1: Integrate different viewpoints as a member of a team
TW2: Work with others to support and accomplish a shared goal

Personal Responsibility – to include the ability to connect choices, actions, and consequences to ethical decision-making
PR1: Evaluate choices and actions and relate consequences to decision-making

Social Responsibility – to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities
SR1: Demonstrate intercultural competence
SR2: Identify civic responsibility
SR3: Engage in regional, national, and global communities

Instructional Goals and Purposes:
The purpose of this course is to increase academic proficiency in expression of mathematical solutions, mathematical reasoning, and mathematical understanding.

Learning Outcomes: (from the ACGM catalog)
After studying the material presented in course, the student should 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.
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 learn the following content:

1) Numeric Reasoning
   a) To perform computations with real and complex numbers.
   b) To define and give examples of complex numbers.
   c) To use estimation to

2) Algebraic Reasoning
   a) To explain and differentiate between expressions and equations using words such as “solve”, “evaluate”, and “simplify”.
   b) To recognize and use algebraic field properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions (absolute value, polynomial, radical, and rational expressions).
   c) To 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) To 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) To interpret multiple representations of equations and relationships.
f) To translate among multiple representations of equations and relationships.

3) Geometric Reasoning
a) To apply properties of geometric figures to solve problems.
b) To make connections between geometry and algebra.

4) Measurement Reasoning
a) To find the perimeter and area of two-dimensional figures.
b) To find volume of three-dimensional figures.

5) Functions
a) To recognize whether a relation is a function.
b) To recognize and distinguish between linear and quadratic functions.
c) To understand and analyze features of a function.
d) To algebraically construct and analyze linear and quadratic functions.
e) To apply linear and quadratic function models to real-world situations.
f) To develop a linear or quadratic function to model a situation.

6) Problem Solving
a) To analyze given information, formulate a plan or strategy, determine a solution, justify the solution, and evaluate the problem-solving process.
b) To formulate a solution to a real-world situation based on the solution to a mathematical problem.
c) To use a function to model a real-world situation.

7) Communication and Representation
a) To use mathematical symbols, terminology, and notation to represent given and unknown information in a problem.
b) To use mathematical language to represent and communicate the mathematical concepts in a problem.
c) To use mathematics as a language for reasoning, problem solving, making connections, and generalizing.
d) To model and interpret mathematical ideas and concepts using multiple representations.
e) To summarize and interpret mathematical information provided orally, visually, or in written form within the given context.
f) To communicate mathematical ideas, reasoning, and their implications using symbols, diagrams, graphs, and words.
g) To create and use representations to organize, record, and communicate mathematical ideas.
h) To explain, display, or justify mathematical ideas and arguments using precise mathematical language in written or oral communications.

8) Connections
a) To connect and use multiple strands of mathematics in situations and problems.
b) To connect mathematics to the study of other disciplines.

Methods of Instruction/Course Format/Delivery:

Methods of Instruction/Course Format/Delivery: Methods employed will include Lecture/demonstration, discussion, problem solving, analysis, and reading assignments. Homework will be assigned. Faculty may choose from but are not limited to, the following methods of instruction:

1. Lecture
2. Discussion
3. Internet
4. Video
5. Television
6. Demonstrations
7. Field trips
8. Collaboration
9. Readings
Major Assignments / Assessments:
The following items will be assigned and assessed during the semester and used to calculate the student's final grade.

Assessment(s):

1. Individual Study Plan in EdReady (created from diagnostics)
2. Final Exam

Course Grade:

Assignment Weights

<table>
<thead>
<tr>
<th>Attendance/Participation</th>
<th>10%</th>
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<tbody>
<tr>
<td>Study Plan/ Final Exam</td>
<td>90%</td>
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Grades for the Course will be assigned as follows:

Score on the Final Exam, Completion of the study plan – at least 70% Mastery is required, attendance/participation - a minimum of 11 hours study time in EdReady is required. Performance in MATH1314 may also be considered. The grade assigned will either be Pass or Fail.

70-100% Pass
0-69% Fail

TSI Completion Requirements for NCBM 0101

NCBM was intended to be a Co-Requisite support for students enrolled in MATH 1314 College Algebra.

For any students enrolled in NCBM0101 who are not enrolled in the MATH 1314 (or other 1300 level math course), or for students who do not pass MATH 1314, this addendum specifies requirements for TSI completion.

In order for a student to achieve TSI complete status by passing NCBM, that student must have at least 70% Mastery of study plan and have spent at least 11 hours studying (this does not include time spent taking topic or unit tests) in EdReady. 11 hours is 70% of the 16 hour course time. Additionally, TSI completion will require taking a proctored Final Exam. The final exam score and the study path score comprise 90% of the grade in the NCBM course.

Students who pass College Algebra (or other 1300 level math) will automatically be considered TSI complete.

Texts, Materials, and Supplies:
The text and resources for this course are provided by the NROC Developmental Mathematics Program. Panola College is a member of NROC; use of this program is free to the students.
Other materials and supplies

1. Consistent access to computer
2. Canvas (Provided by Panola College)
4. Scientific Calculator
5. Ear phones or ear buds

Other:

- For current texts and materials, use the following link to access bookstore listings: http://www.panolacollegestore.com
- For testing services, use the following link: http://www.panola.edu/elearning/testing.html
- 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 Administration Building or go to http://www.panola.edu/student-success/disability-support-services/ for more information.
- 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.