Hagerstown Community College
Official Adult Education Master Syllabus

COURSE: **ADB 217 Adult Basic Education-GED EXPRESS Level Math and Science** 0 Credits

SEMESTER/YEAR: **This information to be completed by Instructor**

INSTRUCTOR: **This information to be completed by Instructor**

CLASS DESCRIPTION:

This is an Adult Basic Education course designed to prepare ABE students with the skills necessary to take the GED test. This course focuses on mathematical reasoning and problem solving as well as content area material in science. Direct class instruction will be given with supplementary materials and computer-based activities included in the course. Students in this course are required to attend the Learning Support Center and the Friday lab for additional practice and assistance. This is a non-credit course.

TEXTBOOKS USED:

There are no textbooks required. Students will have access to textbooks and other computer-based learning materials within the classroom. Students may purchase the textbook at the HCC Campus bookstore if they would like to do so.

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course students will be able to:

Math Standards:

- Understand quantitative problem solving with rational numbers, and be able to apply problem solving techniques in real world situations.
- Apply number properties involving multiples and factors at a satisfactory level.
- Simplify numerical expressions with rational exponents.
- Identify the absolute value of a rational number as its distance from 0 on the number line and determine the distance between two rational numbers on the number line.
- Solve real-world problems using rational numbers.
- Determine when a numerical expression is undefined.
- Write and compute with numerical expressions with squares, square roots, cubes, and cube roots of positive, rational numbers.
- Compute unit rates at a satisfactory level.
- Use scale factors to determine the magnitude of a size change, and convert between actual drawings and scale drawings.
- Solve two-step, arithmetic, real world problems involving ratios and proportions.
- Compute the area and perimeter of triangles, rectangles, and polygons.

- Determine side lengths of triangles, rectangles, and polygons when given area or perimeter.
- Use the Pythagorean Theorem to determine unknown side lengths in a right triangle.
- Compute volume and surface area of cylinders, cones, and pyramids.
- Solve for height, radius, diameter, or side lengths of cylinders, cones, and right pyramids, when given volume or surface area.
- Represent, display, and interpret categorical data in bar graphs, circle graphs, dot plots, histograms, and box plots.
- Calculate the median, mode, and weighted average, and calculate a missing data value, given the average and all the missing data values but one.
- Use counting techniques to solve problems and determine values.
- Understand Algebraic problem solving with expressions and equations.
- Compute with and factor polynomials.
- Evaluate linear and polynomial expressions.
- Write linear, polynomial, and rational expressions, and linear and quadratic equations, given written descriptions, at a satisfactory level.
- Compute with linear and rational expressions.
- Solve real-world problems involving linear equations.
- Solve algebraic and real-world problems involving a system of two linear equations.
- Solve real-world problems involving inequalities and graph solutions on a number line.
- Solve quadratic equations in one variable with real solutions.
- Locate points and graph linear equations in the coordinate plane.
- Determine the slope of a line from a graph, equation, or table.
- For a linear or nonlinear relationship, sketch graphs and interpret key features of graphs and tables in terms of quantities.
- Write the equation of a line when given the slope and a point or two distinct points.
- Use slope to identify parallel and perpendicular lines and to solve geometric problems.
- Compare two different proportional relationships each represented in different ways.

Science Standards

- Analyze scientific and technical arguments, evidence and text-based information.
- Cite specific textual evidence to support a finding or conclusion at a satisfactory level.
- Express scientific information or findings verbally at a satisfactory level.
- Determine the meaning of symbols, terms and phrases as they are used in scientific presentations.
- Apply scientific processes and procedural concepts in context.
- Reason from data or use evidence to support a conclusion.
- Make a prediction based on data or evidence.
- Identify and refine hypotheses for scientific investigations.
- Identify possible sources of error and alter the design of an investigation to correct that error.
- Understand and apply scientific models, theories and processes.
- Reason quantitatively and interpret data in scientific contexts
- Describe a data set statistically.

- Apply formulas from scientific theories.
- Understand and explain non-textual scientific presentations.
- Express scientific information or findings visually.
- Determine the probability of events.
- Use counting and permutations to solve scientific problem

COURSE EXPECTATIONS:

Attendance

Students are expected to attend every class, including labs, as applicable. In addition to the time spent in class, students are expected to practice skills at home. In the case of absences due to emergency (illness, accident, death in the family), it is the student's responsibility to inform the instructor. Documented time (signing in) within the Learning Support Center will contribute to eligibility hours for post-testing, and has the potential to decrease the amount of time the student will have to spend to attain his/her goal. Students who show sporadic attendance will delay progress towards personal goals.

Progress

To make progress, a minimum of 9 hours of additional, independent work outside of the class is expected each week. Typical level progress occurs after 120 hours of instruction.

Students who have taken the same course level three times without making incremental progress towards the next level will be required to meet with the Intake Assessment Specialist to determine a further plan.

COURSE POLICIES:

Honor Code: Upon admission to HCC all students sign a pledge to uphold an honor system which holds the qualities of honesty and integrity in highest regard for the duration of their educational experience.

Services for Students with Disabilities: Students who have a disability are encouraged to identify themselves to the Disability Support Services (DSS) office as early as possible. Reasonable accommodations based on current documentation are provided to qualified students. Contact the Disability Support Services office at 240-500-2628 or at dss@hagerstowncc.edu to request accommodations.

This course is offered free of charge as a service to the community through a grant from the US Department of Labor, Licensing, and Regulation (DLLR). CASAS testing of each student is required as a provision of the grant at the start and end of each session.