Statewide IT Bridge Curriculum:

Contextualized Math Module

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FOUNDATIONS FOR DESIGN

- ✓ Instruction emphasizes learning-by-doing through projects and simulations; therefore, the instructor is a facilitator or learning coach.
- ✓ Each module emphasizes communication, teamwork, and critical thinking.
- ✓ Content is contextualized for math skills.
- ✓ Learning outcomes often require learners to engage in collaborative and individual projects involving authentic materials and resources and to complete documents and tasks for math with the guidance of learning facilitators.
- ✓ Specific units within modules may serve as precursors for additional units within the module. Many lessons and units may be repeated and expanded from one module to another.
- ✓ Self-advocacy and continual self-assessment and self-monitoring are inherent to each module; students should be introduced to, required to meet with, and encouraged to consult with program coordinator as well as academic and employment professionals.
- ✓ Guest speakers and conferences with employment and academic professionals are integral to the relevance and value of the program for students.

ASSUMPTIONS:

- ✓ Each agency or instructor who may use these modules or this program will adapt instructional strategies, content level of difficulty, learning activities, and projects to meet the needs of the program's target population and adult learners of lower and higher academic levels.
- ✓ Referenced resources, relevant Internet links, learning activities (created, suggested, attached, or referenced) will be used, modified, or omitted based on student need and restraints of class time and resources.

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- ✓ This curriculum will work in established internal partnerships within the academic community as well as external partnerships/relationships in the employment community.
- ✓ Units and lessons will be adapted to fit within the varying contact hours of a program.

Module Description:

The Contextualized Math Module is designed to provide students with an understanding of how math as a whole fits and is used within information technology and how a basic understanding of mathematic principles will serve them well within an employment context.

Module Objectives

Students will:

- Research
- Problem solve
- Think critically
- Compare and contrast
- Define terms
- Develop inquiry skills
- Graph results
- Speak publicly

Methods of Instruction

- Lecture
- Small and large group discussions
- Group presentations
- Online research

Methods for Evaluating Student Performance

- Individual and group presentations
- Self-assessment
- Teacher observation logs

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Module Overview

- Examination
- Comparison/Contrast
- Charts/Graphs
- Research/Interpretation/Evaluation
- Critical thinking

Module Outline

I. Use spreadsheets to generate graphs from data
   a. Warmup introduction to graphical representation of data
   b. Open Google Drive and navigate to the application
   c. Enter data and display graphs
   d. Change graphical display

II. Explore patterns in different situations
   a. Logic patterns guessing game
   b. Number Patterns: Describing a pattern
   c. "Recipe" to perform on a number
   d. Skills for thinking about patterns

III. Discover and create algorithms for daily activities
   a. What is an algorithm and why you should care
   b. Create an algorithm of a guessing game
   c. Route finding
   d. Algorithms in everyday life

IV. Create budget spreadsheets; understand and analyze income statements
   a. My Budget Project

V. Make spending and purchasing decisions; calculate costs and discounts; make consumer comparisons
   a. Buying and selling online
   b. The sharing economy