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Course Outline for LRNS 119B

LEARNING SKILLS PRE-ALGEBRA CONCEPTS

Effective: Fall 2013

I. CATALOG DESCRIPTION:
LRNS 119B — LEARNING SKILLS PRE-ALGEBRA CONCEPTS — 2.00 units

Assists students with learning/reviewing pre-algebra concepts in preparation for success in mainstream algebra classes. This includes gaining confidence with integers, variables, setting up and solving basic linear and proportional equations and using logic to set-up equations for word problems. Also covered is the use of geometric formulae to find the area, perimeter and volume of shapes for practical application and the use of order of operations to simplify arithmetic and algebraic expressions

2.00 Units Lecture

Grading Methods:
Pass/No Pass

Discipline:

	MIN
Lecture Hours:	36.00
Total Hours:	36.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 2

III. PREREQUISITE AND/OR ADVISORY SKILLS:

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

A. Master pre-algebra math skills as identifed as needed with initial class assessment and apply to academic and practical situations
   1. Apply the use of integers to addition, subtraction, multiplication, division and exponential operations
   2. Translate math phrases and sentences into algebraic expressions and equations
   3. Set up and solve basic linear and proportional equations
   4. Apply appropriate geometric formulae to find the perimeter, area and volume of gemetric shapes in the practical application of math to life situations (word problems)
   5. Use number logic, proportions and algebra to solve single or multi-step word problems.

V. CONTENT:
A. Assess current achievement level for arithmetic operations and pre-algebra concepts
B. Review operations of fractions, decimals and percents to include the use of integers.
C. How to develop math study skills
   1. The importance of drilling and reviewing
   2. Where to go when you don't remember or didn't learn how to perform a problem
   3. How to create study guides
   4. The importance of review for building math skills
   5. How to prepare for tests and reduce math anxiety
D. Math strategies to compensate for information processing deficits or best utilize one's preferred learning modality
E. Concept of variables and unknowns
   1. creating and siplifying algebra expressions
   2. discussion of like terms
   3. review of principles of addition and multiplication
F. Pre-algebra and algebra vocabulary (translating math phrases and sentences into algebra expressions and equations
G. Set up and solve basic linear and proportional equations
H. How to solve word problems
I. Practical application of geometric formulae to solve problems involving perimeter, area or volume of a shape
J. Interpreting data from charts, graphs and tables

VI. METHODS OF INSTRUCTION:
A. **Audio-visual Activity** - viewing of videos and power points from such websites as Khan Academy and algebra.com to provide increased visual/audio modalities for learning
B. **Lecture** -
C. **Research** - Students will need to research resources of math explanation and instruction from the internet and present their favorite websites to the class
D. **Individualized Instruction** - students will use self-paced independent learning skills to improve their math competency
E. **Discussion** - The "whip around" technique will be used to question students and gauge their understanding of material and to

encourage discussion amongst students of where and how to apply their math skills

VII. TYPICAL ASSIGNMENTS:
A. Self-paced work from required workbooks to drill skills
B. Class presentation on "how I learned how to ??? from this website"
C. Homework assignments on weekly topics
D. Creation of a personal study guide for solving word problems

VIII. EVALUATION:
A. **Methods**

1. Exams/Tests
2. Quizzes
3. Oral Presentation
4. Projects
5. Class Participation
6. Class Work
7. Home Work

B. **Frequency**

1. One oral presentation on an online resource.
2. One demonstrated study guide on how to solve word problems
3. Quizzes will be every 2-3 weeks as specific topics are covered
4. Self-paced assignments that reflect completion of at least one workbook or the equivalent of 8 hours of independent class work.
5. Homework assignments will be every 1-2 weeks
6. One cumulative final exam

IX. TYPICAL TEXTS:
1. Van Dyke, J., Rogers, J., Adams, H. *Fundamentals of Mathematics.* 10th ed., Cengage Learning, 2011.

X. OTHER MATERIALS REQUIRED OF STUDENTS:
A. Basic math calculator Colored pencils or pens