



PALS-057: PRE-ALGEBRA SUPPORT (FORMERLY LNSK-057)

Effective Term

Fall 2022

BOT Approval Date

12/16/2021

Discipline

PALS - Personalized Academic Learning Skills

Course Number

057

Course Title

Pre-Algebra Support (formerly LNSK-057)

Short Title

Pre-Algebra Support

Credit Status (CB 04)

C - Credit - Not Degree Applicable

Units**Lecture Units**

1.50

Lab Units

0.50

Total Units

2.00

Hours**Lecture Contact Hours**

24-27

Out of Class Hours Lecture

48-54

Lab Contact Hours

24-27

Out of Class Hours Lab

0.00

Total Contact Hours

48 - 54

Total Out of Class Hours

48 - 54

Total Student Learning Hours

96 - 108

Distance Education

Yes



Distance Education

Distance Education Type

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:

- a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
- b. Any planned face-to-face meetings, such as an orientation or study session, must be optional
- c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- Orientation - Students must be oriented to the online and face-to-face portions at the start of the course.
- Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.
- Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course is designed to provide small group and/or individualized instruction and intervention strategies to students identified as Learning Disabled or with significant difficulty with basic math skills. Offered as pass/no pass only. (formerly LNSK-057)

Codes

TOP Code (CB 03)

4930.32 - Learning Skills, Learning Disabled

CIP Code

32.0101 - Basic Skills and Developmental/Remedial Education, General.

Repeatability Code

No

Grading Option

P/NP only

Learning Objectives

Learning Objectives

Learning Objective

1. Solve problems with whole numbers, fractions, decimals, percents, and exponents.
2. Develop strategies to find factors and multiples.
3. Solve problems to a given place value when rounding whole numbers and decimals.
4. Evaluate simple algebraic expressions using Order of Operations.

5. Formulate strategies to solve word problems and expressions.
6. Analyze functional limitations and demonstrate mastery of individualized learning objectives as prescribed in individual study plan.
7. Apply strategies in solving word problems to model real world applications through the lens of equity and diversity.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

Solve basic mathematics problems containing whole numbers, fractions, decimals, and percents.

Communicate effectively with instructors, staff and fellow students using appropriate methods of technology and select appropriate learning and compensatory strategies.

Practice active learning and demonstrate measurable progress of course level learning outcomes defined in their educational study plan.

Program Learning Outcomes

Learning Outcome

Analyze and critically evaluate functional limitations, select appropriate compensatory learning strategies, and evaluate use adaptive technologies appropriate for their individual remediation needs.

Communicate effectively with instructors, staff and fellow students using appropriate methods of technology and select appropriate learning and compensatory strategies.

Demonstrate personal responsibility, identify personal needs and goals, and select appropriate resources necessary to meet them.

Practice active learning and demonstrate measurable progress of course level learning outcomes defined in their educational study plan.

Institutional Learning Outcomes

Aesthetic Awareness: The student will identify and evaluate how aesthetic expression leads to an appreciation of social and cultural context as well as the values of art and nature.

Communication: The student will effectively express and exchange ideas through listening, speaking, reading, writing, visual works, and other modes of interpersonal expression.

Critical Thinking: The student will analyze problems, gather and synthesize relevant information, evaluate ideas, information, and evaluate alternative points of view to create, innovate and implement effective solutions.

Cultural Awareness and Humility: The student will demonstrate knowledge of and sensitivity toward individuals of diverse ethnicity, age, gender, sexual orientation, and religious affiliations, as well as toward those individuals with diverse abilities and socio-economic classes to respectfully interact with individuals of diverse perspectives, beliefs and values while being mindful of the limitation of their own cultural frameworks.

Information and Technology Literacy: The student will access, interpret, evaluate, and apply relevant information sources and digital media effectively, and in an ethical and legal manner.

Scientific Awareness: The student will apply the scientific method of inquiry to assess potential solutions for real-life challenges by employing science-based knowledge and methodologies in daily life.

Social Awareness: The student will recognize and analyze the interconnectedness of global, national, and local concerns, analyzing cultural, political, social, and environmental issues from multiple perspectives and appreciate similarities and differences among cultures.

**Personal
and Professional Responsibility
Civic**

Content

Course Lecture Content

1. Solve problems with whole numbers, fractions, decimals, percents, and exponents
 - a. Basic math Terminology
 - b. Add, Subtract, Multiply, and Divide Whole Numbers
 - c. Add, Subtract, Multiply, and Divide Fractions
 - d. Add, Subtract, Multiply, and Divide Decimals
 - e. Add, Subtract, Multiply, and Divide Percents
 - f. Add, Subtract, Multiply, and Divide Problems with Exponents

- g. Fractions to Decimal
- h. Decimal to Fraction
- i. Fraction to Percent
- j. Decimal to Percent
- 2. Factors and multiples
 - a. Prime Numbers and Factors
 - b. Composite Numbers and Factors
 - c. Greatest Common Factors
 - d. Common Multiples
 - e. Least Common Multiple
- 3. Round whole numbers and decimals to a given place value
 - a. Place value naming
 - b. Whole number rounding
 - c. Rounding Decimals
 - d. Number forms- words, standard and expanded
- 4. Simplify expressions using Order of Operations
 - a. Whole number expressions
 - b. Expressions with exponents
- 5. Word problems and expressions
 - a. Translate word problems from different countries and culture into math expressions
 - b. Strategies for solving word problems
- 6. Analyze math problems
 - a. Task analyze basic math problems
 - b. Task analyze word problems
 - c. Identify key words that result in correct operation for solving math problems
 - d. Evaluate word problems and develop methods for eliminating unimportant information.
- 7. Compensatory math test taking strategies for functional limitation
 - a. Functional limitations
 - b. Compensatory math learning strategies to solve problem.
 - c. **Problem Solving Strategy**
 - d. **Read the word problem.**
 - e. **Identify** what you are looking for.
 - f. **Name** what you are looking for.
 - g. **Translate** words into equations.
 - h. **Solve** the equation using good algebra techniques.
 - i. **Check** the answer in the problem.
 - j. **Answer** the question with a complete sentence.

Special Topics

- 1. Arithmetic
- 2. Fractions, Decimals and Percents Strategies
- 3. Pre- Algebra Strategies
- 4. Solving Word Problems Strategies
- 5. Math Test Taking
- 6. Using calculators and tables

Course Lab Content

- 1. Whole numbers, fractions, decimals, percents, and exponents
 - a. Basic math Terminology
 - b. Add, Subtract, Multiply, and Divide Whole Numbers
 - c. Add, Subtract, Multiply, and Divide Fractions
 - d. Add, Subtract, Multiply, and Divide Decimals
 - e. Add, Subtract, Multiply, and Divide Percents
 - f. Add, Subtract, Multiply, and Divide Problems with Exponents
 - g. Change Fractions to Decimal
 - h. Change Decimal to Fraction

- i. Change Fraction to Percent
 - j. Change Decimal to Percent
- 2. Factors and multiples
 - a. Identify Prime Numbers and Factors
 - b. Identify Composite Numbers and Factors
 - c. Solve for Greatest Common Factors
 - d. Identify Common Multiples
 - e. Solve for Least Common Multiple
- 3. Whole numbers and decimals round to a given place value
 - a. Use place value system in giving the value of each digit of a given number
 - b. Write whole number correctly
 - c. Write decimals correctly
 - d. Write numbers in different forms- words, standard and expanded
- 4. Order of Operations
 - a. Apply the order of operation in whole number expressions
 - b. Solve expressions with exponents
- 5. Word problems and expressions
 - a. Solve word problems from different cultures and translate into math expressions
 - b. Apply strategies for solving word problems
- 6. Math problems task analysis
 - a. Analyze basic math problems
 - b. Apply math strategies in solving word problems
 - c. Identify key words identification that result in correct operation for solving math problems
 - d. Apply word problems and methods for eliminating unimportant information.
- 7. Math test taking strategies appropriate for functional limitation
 - a. Analyze functional limitations
 - b. Apply different compensatory math learning strategies
 - c. Master individualized learning objectives as prescribed in individual study plan.

Special Topics

- 1. Arithmetic
- 2. Fractions, Decimals and Percents Strategies
- 3. Pre- Algebra Strategies
- 4. Word Problems Strategies
- 5. Math Test Taking Strategies
- 6. Calculators and tables

Methods of Instruction

Method

Online Activity/Discussion

Integration

Chisenbops, math manipulatives, tactile sensory activities, or gross motor compensatory learning strategies may be used for remediation of individual weaknesses in computation, basic mathematical operations, and understanding pre-algebra concepts including measurement, numeracy, and directionality.

DE Adaptations for MOI

Activities can be adapted using built-in features of a course management system (CMS). For example, an activity can be recorded by the instructor or a link to an online resource can be shared via CMS. All material will meet accessibility requirements.

Method

Individualized Instruction

Integration

Computer tutorials and adaptive software targeting remediation of specific functional limitations may be used.

DE Adaptations for MOI

Activities can be adapted using built-in features of a course management system (CMS). For example, an activity can be recorded by the instructor or a link to an online resource can be shared via CMS. All material will meet accessibility requirements.

Method

Lecture

Integration

Instructor will use lecture to present concepts on how to solve real world word problems and algebraic applications with a diversity and multi cultural lens. Lecture will support the infusion of student feedback and interaction with the instructor.

Individual and/or small group demonstrations, direct instruction, and structured lab activities may be used to teach coding, calculators, tables, and mnemonics techniques with emphasis on functional limitations in computational and conceptual math.

DE Adaptations for MOI

Lectures can be adapted to a course management system to be delivered synchronously or asynchronously. For example, videos can be recorded by the instructor and embedded to a course page and lecture notes can be added utilizing a content editor. All material will meet accessibility requirements.

Method

Lab Activities

Integration

Lab activities with guided drill and practice and quizzes may be used to monitor progress and guide instruction in mathematical and pre-algebra computations and concepts and refine strategies based on functional limitations and individual student learning objectives.

DE Adaptations for MOI

Lab activities can be adapted using built-in features of a course management system (CMS). For example, an activity can be recorded by the instructor or a link to an online resource can be shared via CMS. All material will meet accessibility requirements.

Methods of Evaluation**Method**

Class Work

Integration

Class and lab work will be used to evaluate the student's ability to solve problems accurately in identified areas of weakness in basic math skills. Class work will be used as a formative assessment and will be graded on their correctness when solving real world word problems with whole numbers, fractions, decimals, percents, and exponents.

Students may be assessed in several different ways including but not limited to: Direct Instruction, answering questions, in class discussion, tutorials, and hands-on guided practice.

DE Adaptations for MOE

Class and lab work will be used to evaluate the student's ability to solve problems accurately in identified areas of weakness in basic math skills. Class work will be used as a formative assessment and will be graded on their correctness when solving real world word problems with whole numbers, fractions, decimals, percents, and exponents. Written feedback are returned to the student via CMS. Rubrics and clear instructions are provided.

Method

Homework

Integration

All homework will be used as formative assessments and will be graded on completeness and accuracy. Students will be graded on their ability to accurately solve problems with whole numbers, fractions, decimals, percents, and exponents; develop strategies to find factors and multiples; solve problems to a given place value when rounding whole numbers and decimals; evaluate simple algebraic expressions using Order of Operations and formulate strategies to solve word problems and expressions. Students will be graded on their ability to apply the above topics to model culturally diverse real world applications.

DE Adaptations for MOE

All homework will be used as formative assessments and will be graded on completeness and accuracy. Students will be graded on their ability to accurately solve problems with whole numbers, fractions, decimals, percents, and exponents; develop strategies to find factors and multiples; solve problems to a given place value when rounding whole numbers and decimals; evaluate simple algebraic expressions using Order of Operations and formulate strategies to solve word problems and expressions. Students will be graded on their ability to apply the above topics to model culturally diverse real world applications.

Homework assignments are submitted through the CMS and are evaluated via rubric and/or individual instructor feedback.

Method

Other

Integration

One-to-one collaboration with instructor may be used to pre-assess skill level, select individual student learning objectives and adaptive techniques, and post-assess for measurable progress in basic math numeracy and pre-algebra skills.

DE Adaptations for MOE

Individual video conference with student and assign individualized assessment. Immediate feedback will be provided through CMS.

Assignments**Assignment Type**

Writing

In-class and/or outside of class

In-class

Outside of class

Formative or Summative

Formative

Assignment

Translate the words and solve the following: What is 15% of \$235.00?

How assignment will be adapted in online format

The problem will be assigned, submitted, and graded through the course management system (CMS). The feedback can be delivered using the comment section or within an accompanying rubric. The instructions and the assignments will meet accessibility requirements.

Assignment Type

Other

In-class and/or outside of class

In-class

Outside of class



Formative or Summative

Formative

Assignment

Find the Greatest Common Factor and Least Common Multiple of 12 and 16 using alternative LD strategies and /or color coding

How assignment will be adapted in online format

The problem will be assigned, submitted, and graded through the course management system (CMS). The feedback can be delivered using the comment section or within an accompanying rubric. The instructions and the assignments will meet accessibility requirements.

Assignment Type

Other

In-class and/or outside of class

In-class

Outside of class

Formative or Summative

Formative

Assignment

Round 628.457 to the nearest hundredth alternative LD strategies and /or color coding

How assignment will be adapted in online format

The problem will be assigned, submitted, and graded through the course management system (CMS). The feedback can be delivered using the comment section or within an accompanying rubric. The instructions and the assignments will meet accessibility requirements.

Assignment Type

Reading

In-class and/or outside of class

In-class

Outside of class

Formative or Summative

Formative

Assignment

Read the problem the explore different ways to understand multiplying fractions and mixed numbers.

Yin has $2\frac{3}{4}$ yards of yellow ribbon. She uses $\frac{1}{2}$ of the ribbon to decorate bookmarks for her cousins. How many yards of ribbon did Yin use for the bookmarks?

How assignment will be adapted in online format

The problem will be assigned, submitted, and graded through the course management system (CMS). The feedback can be delivered using the comment section or within an accompanying rubric. The instructions and the assignments will meet accessibility requirements.

Assignment Type

Other

In-class and/or outside of class

In-class

Outside of class



Formative or Summative

Formative

Assignment

Read and solve the word problem.

Rita's current hourly wage for working at Denti Smiles is \$12.00. Rita was told that at the beginning of next month, her new hourly wage will be an increase of 6% of her current hourly wage. What will be Rita's new hourly wage?

How assignment will be adapted in online format

The problem will be assigned, submitted, and graded through the course management system (CMS). The feedback can be delivered using the comment section or within an accompanying rubric. The instructions and the assignments will meet accessibility requirements.

Assignment Type

Writing

In-class and/or outside of class

In-class

Outside of class

Formative or Summative

Summative

Assignment

Create your own Math dictionaries . Write the rules, strategies or examples for the following concepts:

1. Solving problems with whole numbers, fractions, decimals, percents, and exponents
2. Finding factors and multiples
3. Solving problems to a given place value when rounding whole numbers and decimals
4. Evaluating simple algebraic expressions using Order of Operations
5. Solving word problems and expressions.

How assignment will be adapted in online format

The writing assignment will be assigned, submitted, and graded through the course management system (CMS). Instructor feedback can be posted in the gradebook comments and/or in the discussions.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Do an internet research on the history of any of the following 3 options on the country of your choosing.

1. Place Values
2. Order of Operations
3. Strategies to solve word problems and expressions.

You will use your research to engage in a discussion with your peers using the CMS.

How assignment will be adapted in online format

Do an internet research on the history of any of the following 3 options on the country of your choosing.

1. Place Values
2. Order of Operations
3. Strategies to solve word problems and expressions.



You will use your research to engage in a discussion with your peers using the CMS. Immediate instructor feedback will be provided through the CMS following the rubric of the assignment.

Course Materials

Textbooks

Mc Mullen, C. (2020) Essential Prealgebra Skills Practice Workbook, (Zishka Publishing)
ISBN-13 : 978-1941691083, ISBN-10: 1941691080

Other Resources

PowerPoint Presentations; Khan Academy; Math Aids

Open Educational Resources

MyOpenMath

Class Size Information

Class Size

15

Class Size Category

J - Specialty lab

Diversity and Inclusion

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

In the objectives, we included the necessity to apply word problems strategies to model real world applications through the lens of equity and diversity. The content includes multicultural origins and applications of arithmetic and pre- algebra concepts. Assignments give students the opportunity to research and discuss multicultural origins of place value, order of operations and word problems and expressions.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

Weekly assignments, discussion posts, homework and final project were analyzed and given attention to align with promoting an equitable course to students. The goal is to support all students, meet where they are at and have the students reflect on their cultural frame of reference and connect their own personal experiences. Students are also presenting information critical to the learning objectives that provides a diverse perspective to the instructional material.

Interactions

Explain how the course will incorporate student-to-student interaction.

Students will incorporate student- to- student interaction through discussion posts. Each student is given the opportunity to respond responsively and collaboratively to the posts of other students. Students will also work in group activities.

Explain how the course will incorporate instructor-to-student interaction.

Lectures will be delivered in online format. Online lectures and discussions are utilized. Through weekly announcements, the instructor sends out announcements using multimedia where students can respond by acknowledging the announcements or posing relevant questions about the announcement. An optional zoom meeting is provided for students to take advantage of in case there are questions and clarifications. The instructor will participate in the discussion post and encourage students to make connections between course concepts. The instructor encourages students to utilize accommodations and strategies while working on activities for the course.

Explain how the course will incorporate student-to-content interaction.

To learn different arithmetic and pre - algebra skills, students will reference accessible and ADA compliant materials such as assigned textbooks and handouts, written lecture materials or transcripts of lectures, illustrative images, charts and graphs, video or audio lectures, narrated PowerPoint presentations, embedded or linked multimedia content (such as films, YouTube videos, podcasts, etc), and student created or curated content



Explain how the course will incorporate student-to-self interaction (metacognitive).

The course emphasizes on basic math skills such as arithmetic and pre- algebra concepts. Students will be able to apply math strategies. Students will work on exercises based on ability level.

Key: 2041