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## Course Outline for MATH 55C

### INTERMEDIATE ALGEBRA COREQUISITE SUPPORT

Effective: Spring 2018

#### I. CATALOG DESCRIPTION:

MATH 55C — INTERMEDIATE ALGEBRA COREQUISITE SUPPORT — 2.00 units

This course is a co-requisite for Intermediate Algebra. The course is designed to provide additional support to students who are currently taking an Intermediate Algebra course, such as students who would like formal, built-in support, students who have not placed into Math 55 but hope to accelerate through the sequence of basic skill math courses, or those who are repeating the course. This course will support students in achieving Intermediate Algebra learning goals by providing a review of arithmetic, algebraic and geometric concepts that are relevant to their Intermediate Algebra course, by providing study strategies that promote understanding and improve performance, more in-depth investigation of core concepts that are difficult for students to master, and learning skills.

2.00 Units Lecture

#### Prerequisite

MATH 107 - Pre-Algebra  
with a minimum grade of C  
or

MATH 107B - Pre-Algebra B  
with a minimum grade of C

#### Corequisite

MATH 55 - Intermediate Algebra for STEM

#### Grading Methods:

Pass/No Pass

#### Discipline:

- Mathematics

	<u>MIN</u>
<b>Lecture Hours:</b>	36.00
<b>Total Hours:</b>	36.00

#### II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

#### III. PREREQUISITE AND/OR ADVISORY SKILLS:

**Before entering the course a student should be able to:**

##### A. MATH107

1. perform accurate computations with whole numbers, fractions and decimals, signed and unsigned, without using a calculator;
2. simplify and evaluate variable expressions;
3. demonstrate a knowledge of ratios, proportions and percentages and their application;
4. demonstrate knowledge of geometric figures and their properties;
5. demonstrate a knowledge of the English and metric units of length, area, volume, mass, temperature and time;
6. solve linear equations involving multiple steps;
7. analyze and construct graphs of data;
8. construct graphs of linear equations in two variables in a rectangular coordinate system;
9. apply the concepts learned to specific real-life applications, such as, simple interest, business and finance, restaurants, bank statements, etc.

##### B. MATH107B

#### IV. MEASURABLE OBJECTIVES:

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

- A. Use learning strategies to identify and communicate in their own words the key concepts of Intermediate Algebra.
- B. Use effective strategies to read mathematical text for understanding.
- C. Organize and justify their mathematical thinking on Intermediate Algebra problems.
- D. Apply Intermediate Algebra concepts at a higher level.

- E. Use problem solving process to read mathematical problems with understanding, identify relevant information, define variables, execute relevant procedures and interpret results in the context of the problem.
- F. Develop study skills and life skills that will improve the student's likelihood of succeeding in their academic goals, such as identifying his/her individual growth mindset, brain research, and learn personal time management, study skills, test taking and math anxiety strategies, etc.

#### V. CONTENT:

- A. Regular classroom and small group discussion will focus on identifying and communicating what learning objectives were covered in their Intermediate Algebra class.
  - 1. Students will learn note-taking skills and refer to the notes for understanding.
  - 2. Students will learn how to synthesize big ideas in the material.
  - 3. Students will identify examples or problems that are relevant to the learning objectives.
- B. Practice organizing their thinking and justifying each mathematical steps while simplifying or solving Intermediate Algebra problems.
- C. Read mathematical text for understanding.
  - 1. Make a skeleton outline of material covered in the class and textbook.
  - 2. Highlight important facts in the material or textbook.
- D. Review Intermediate Algebra concepts and practice completing many Intermediate Algebra problems.
- E. Successfully solve Intermediate Algebra context problems by learning how to:
  - 1. Read context problems with understanding
  - 2. Identify relevant information.
  - 3. Define variables.
  - 4. Execute relevant procedures.
  - 5. Interpret results in the context of the problem.
- F. Learn appropriate skills necessary to become more productive, successful and independent learners.
  - 1. Students will engage in metacognitive discussions around new math concepts.
  - 2. Students will participate in Growth Mindset, Brain Research and learning skills discussions.
  - 3. Students will learn about free resources available on campus and on the internet to enhance their learning of mathematics.
  - 4. Students will actively participate in classroom discussions around topics such as time management, note-taking, study habits, test taking strategies and dealing with math anxiety.

#### VI. METHODS OF INSTRUCTION:

- A. **Discussion** - Instructor should allow regular time to discuss what main Intermediate Algebra concepts were covered in their Math 55 course, what the big ideas are, citing their classroom notes and mathematical textbook for evidence.
- B. **Audio-visual Activity** - Personalized learning supports and practice on prerequisite material.
- C. **Lecture** - Lecture will only be in small, relevant amounts, with specific skills-building goal in mind and time left for students to practice applying the demonstrated skill described.
- D. **Individualized Instruction** - Instructor will provide individualized instruction as often as possible.
- E. **Demonstration** - Instructor should model examples of what a mathematician should do when approaching the Intermediate Algebra content. Students should then practice applying those strategies to additional problems.
- F. **Directed Study** - Class will spend time in directed Intermediate Algebra content discussions, with students practicing applying concepts individually or in small groups.

#### VII. TYPICAL ASSIGNMENTS:

- A. In Class Discussions
  - 1. Read from the text each section covered in the Math 55 class that week. Create a skeleton outline of material covered in the textbook. Identify the key concepts covered in these sections. Discuss what these concepts entail and practice applying them to problems.
  - 2. Learn appropriate skills necessary to become more productive, successful and independent learners by discussing and completing assignments on leading research around growth mindset, learning, study skills, test preparation, math anxiety, etc.
- B. In Class Collaborations
  - 1. Students work collaboratively on applying math concepts from Intermediate Algebra. Sample learning assignment: Given the key concepts discussed in Intermediate Algebra this week, what are relevant real-world applications? Work collaboratively on problem solving method to set up, solve, communicate the problem solving strategy and solution.

#### VIII. EVALUATION:

##### A. **Methods**

- 1. Quizzes
- 2. Simulation
- 3. Group Projects
- 4. Class Participation
- 5. Class Work

##### B. **Frequency**

- 1. Daily class participation and classwork activities should be completed towards supplementing learning of Intermediate Algebra content and/or developing study skills and life skills that will improve the student's likelihood of succeeding in their academic goals.
- 2. Weekly assessment quizzes on prerequisite and current content. This can be done inclass or online.
- 3. Simulations and group projects as appropriate to the content.

#### IX. TYPICAL TEXTS:

- 1. Bass, Alan. *Math Study Skills*. 2 ed., Pearson, 2013.
- 2. Rockswold, Gary, and Terry Krieger. *Beginning and Intermediate Algebra with Applications & Visualization*. 3rd ed., Pearson, 2016.
- 3. Marecek, Lynn, and MaryAnne Anthony-Smith. *Strategies For Success: Study Skills for the College Math Student*. 2nd ed., Pearson Publishing, 2014.

#### X. OTHER MATERIALS REQUIRED OF STUDENTS: