COURSE OUTLINE: MATH 90AB
D Credit – Degree Applicable
COURSE ID 010425
February 2019

COURSE DISCIPLINE: MATH

COURSE NUMBER: 90AB

COURSE TITLE (FULL): Intermediate Algebra for BSTEM

COURSE TITLE (SHORT): Inter Alg for BSTEM

CATALOG DESCRIPTION

MATH 90AB is the first part of a three-part Intermediate Algebra course for BSTEM. MATH 90AB, MATH 90CD, and MATH 90EF are collectively equivalent to MATH 90, which is intended to prepare students for algebra-intensive transfer courses (i.e. Precalculus, Business Calculus, or College Algebra). Topics include fundamental laws, plotting lines, linear equations, expressions, and inequalities, and systems of linear equations. The MATH 90AB, MATH 90CD, and MATH 90EF sequence is intended for students who plan to major in BSTEM (business, science, technology, engineering, and math). Note: This course may not be taken for credit by students who have completed MATH 90, 90+, 101, 118, 120, 220A, 220B or 220S. A maximum of 6 units will be granted for the MATH 90AB, 90CD, and 90EF sequence and any of the following courses: MATH 90, 119, 219A, 219B, 219C, 146, 246A, or 246B. A maximum of 6.5 units will be granted for the MATH 90AB, 90CD, and 90EF sequence and MATH 90+. A maximum of 7 units will be granted for the MATH 90AB, 90CD, and 90EF sequence and either of the following courses: MATH 30 or 30+. A maximum of 8 units will be granted for MATH 090 and either of the following: MATH 130 or 131.

Total Lecture Units: 1.50

Total Laboratory Units: 0.50

Total Course Units: 2.00

Total Lecture Hours: 27.00

Total Laboratory Hours: 27.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 54.00

Total Out-of-Class Hours: 54.00

Prerequisite: Placement is based on academic background.

ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1				Add, subtract, multiply, and divide real	Yes
2				convert between percents, decimals, and fractions;	Yes
3				solve introductory linear equations and inequalities;	Yes
4				simplify introductory exponential	Yes
5				add, subtract, multiply and divide	Yes
6				graph introductory linear equations and inequalities;	Yes
7				find the equation of a line;	Yes
8				solve linear systems using 3 different	Yes
9				use algebra to solve applied problems;	Yes
10				factor polynomials;	Yes
11				demonstrate knowledge of test-taking strategies	Yes

EXIT STANDARDS

1 Solve absolute value equations and inequalities;
2 solve linear equations and compound inequalities;
3 find the equation of a line parallel or perpendicular to a given line;
4 solve a system of linear equations using elimination, substitution;
5 solve systems of linear inequalities;
6 solve applied problems.

STUDENT LEARNING OUTCOMES

1 simplify various linear algebraic expressions;
2 identify different types of equations and inequalities, select the appropriate strategy and solve the equation or inequality, and check the reasonableness of the solution;
3 identify, formulate, and analyze mathematical functions numerically, graphically, and symbolically at the intermediate algebra level and have the ability to transition between these representations;
4 formulate mathematical models for a variety of real-world phenomena and communicate mathematical solutions clearly and effectively.

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	The Real Number System • Sets and the real number system • Equality and properties of real numbers • Inequalities and graphs of sets of real numbers • Arithmetic of real numbers	5	5	10
2	Equations and Inequalities • Linear equations and their solutions • Applications • Formulas and literal equations • Absolute value equations • Linear inequalities • Inequalities with absolute values	6	6	12
3	Graphs of Lines, Equations of Lines, and Variation • The rectangular coordinate system • The slope of a line • Equations of lines • Graphs of linear inequalities in two variables • Introduction to functions • The algebra of functions, composition of functions • Translations and reflections of functions • Proportion and variation	6	6	12

4	Systems of Equations and Inequalities • Solution by graphing • Solution by substitution • Solution by elimination • Solution of three equations in three variables • Applications • Systems of linear inequalities	6	6	12
5	Metacognition and Affective Domain • Study plans • Mindset (growth, resilience, hardiness, and grit)	4	4	8
				54

OUT OF CLASS ASSIGNMENTS

1 homework (e.g. problems sets related to course content)

METHODS OF EVALUATION

1 quizzes
2 examination
3 comprehensive final examination

METHODS OF INSTRUCTION

- [x] Lecture
- [ ] Laboratory
- [ ] Studio
- [x] Discussion
- [x] Multimedia
- [x] Tutorial
- [x] Independent Study
- [x] Collaboratory Learning
- [x] Demonstration
- [ ] Field Activities (Trips)
- [x] Guest Speakers
- [x] Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	IBSN	Date
Intermediate Algebra	Required	Cengage	5	Print	Tussy, Alan	1-111-56767-0	2013