



COURSE OUTLINE: MATH 90CD
D Credit – Degree Applicable
COURSE ID 010426
February 2019

COURSE DISCIPLINE: MATH
COURSE NUMBER: 90CD
COURSE TITLE (FULL): Intermediate Algebra for STEM
COURSE TITLE (SHORT): Inter Alg for STEM

CATALOG DESCRIPTION

MATH 90CD is the second 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 fractional exponents, radical and rational expressions and equations, factoring, functions, algebra of functions, and graphs of functions. 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 the satisfactory completion of MATH 90AB.



ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	MATH	90AB	Intermediate Algebra for BSTEM	Solve absolute value equations and inequalities;	Yes
2	MATH	90AB	Intermediate Algebra for BSTEM	solve linear equations and compound inequalities;	Yes
3	MATH	90AB	Intermediate Algebra for BSTEM	find the equation of a line parallel or perpendicular to a given line;	Yes
4	MATH	90AB	Intermediate Algebra for BSTEM	solve a system of linear equations using elimination, substitution;	Yes
5	MATH	90AB	Intermediate Algebra for BSTEM	solve systems of linear inequalities;	Yes
6	MATH	90AB	Intermediate Algebra for BSTEM	solve applied problems.	Yes

EXIT STANDARDS

- 1 Perform operations with polynomials;
- 2 simplify complex fractions;
- 3 perform operations with radical expressions;
- 4 simplify expressions with rational exponents;
- 5 solve rational equations;
- 6 solve equations with radicals;
- 7 find the composition of two functions;
- 8 solve applied problems.



STUDENT LEARNING OUTCOMES

- 1 simplify various algebraic expressions (polynomial, rational, radical);
- 2 identify different types of equations, select the appropriate strategy and solve the equation, 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	Exponents, Polynomials, and Factoring <ul style="list-style-type: none"> • Exponents and scientific notation • Adding and subtracting polynomials • Multiplying polynomials and dividing polynomials • The greatest common factor and factoring by grouping • The difference of two squares; the sum and difference of two cubes • Factoring trinomials • Solving equations by factoring • Applications 	8	8	16



2	Rational Expressions <ul style="list-style-type: none"> • Simplifying rational expressions • Multiplying and dividing rational expressions • Adding and subtracting rational expressions • Complex fractions • Equations containing rational expressions • Applications • Graph rational functions 	8	8	16
3	Rational Exponents and Radicals <ul style="list-style-type: none"> • Rational exponents • Radical expressions • Adding and subtracting radical expressions • Multiplying and dividing radical expressions • Solving equations with radicals • Applications of radicals • Complex numbers 	8	8	16
4	Metacognition and Affective Domain <ul style="list-style-type: none"> • Reading techniques • Cognitive techniques 	3	3	6
				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

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

TEXTBOOKS

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