COURSE OUTLINE: MATH 90EF
D Credit – Degree Applicable
COURSE ID 010427
February 2019

COURSE DISCIPLINE: MATH

COURSE NUMBER: 90EF

COURSE TITLE (FULL): Intermediate Algebra for BSTEM

COURSE TITLE (SHORT): Inter Alg for BSTEM

CATALOG DESCRIPTION

MATH 90EF is the final part of a three-part Intermediate Algebra course for BSTEM. 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 quadratic equations and inequalities, functions and inverse functions, graphs of conic functions, and exponential and logarithmic 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 Contact Hours: 54.00

Prerequisite: Placement is based on the satisfactory completion of MATH 90CD.

ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	MATH	90CD	Intermediate Algebra for STEM	Perform operations with polynomials;	Yes
2	MATH	90CD	Intermediate Algebra for STEM	simplify complex fractions;	Yes
3	MATH	90CD	Intermediate Algebra for STEM	perform operations with radical expressions;	Yes
4	MATH	90CD	Intermediate Algebra for STEM	simplify expressions with rational exponents;	Yes
5	MATH	90CD	Intermediate Algebra for STEM	solve rational equations;	Yes
6	MATH	90CD	Intermediate Algebra for STEM	solve equations with radicals;	Yes
7	MATH	90CD	Intermediate Algebra for STEM	find the composition of two functions;	Yes
8	MATH	90CD	Intermediate Algebra for STEM	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 identify different types of equations and inequalities, select the appropriate strategy and solve the equation or inequality, and check the reasonableness of the solution;
2 identify, formulate, and analyze mathematical functions numerically, graphically, and symbolically at the intermediate algebra level and have the ability to transition between these representations;
3 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	Quadratic Equations • Completing the square • Quadratic formula • The discriminant and its applications • Equations quadratic in form • Non-linear inequalities of one variable	9	9	18
2	Exponential and Logarithmic Functions • One-to-one functions • Inverse functions • Exponential functions • Logarithmic functions • Properties of logarithms • Common and natural logarithms • Exponential equations and change of base • Solving logarithmic equations • Applications	10	10	20
3	The Conic Sections • Parabolas • Circles	5	5	10
4	Metacognition and Affective Domain • Study skills • Test taking skills	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

- [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