Bossier Parish Community College
Master Syllabus

Course Prefix & Number: MATH 102 **Credit Hours:** 3-3-0

Course Title: College Algebra

Course Prerequisites: ACT score of 19 or higher, acceptable placement test score, or grade of "C" or higher in MATH 099

Textbook(s): Blitzer, Robert. College Algebra, 8^{th} edition. Pearson, 2021. ISBN: 9780136922148

Course Description: Topics from algebra including complex numbers; radical and rational equations; linear and quadratic equations and inequalities; absolute value equations and inequalities; lines and slope; graphs; inverse, exponential, and logarithmic functions; systems of equations and inequalities; conics; applications.

Learning Outcomes:
At the end of this course, the student will:

A. solve linear, rational and quadratic equations;
B. solve other types of equations and linear inequalities;
C. perform operations of functions, evaluate formulas; graph linear equations, and circles;
D. graphing quadratic functions;
E. solve and graph exponential and logarithmic functions;
F. solve systems of equations and inequalities; and
G. graph the conics.

To achieve the learning outcomes, the student will or will be able to:
(The letter designations at the end of each statement refer to the learning outcome(s).)

1. solve linear equation containing parenthesis; (A)
2. solve rational equation with variables in the denominator; (A)
3. solve linear application problems;(A)
4. simplify a square root of a negative number; (A)
5. perform addition, subtraction, multiplication and division of complex numbers; (A)
6. rationalize the denominator with the complex conjugate; (A)
7. solve quadratic equations by factoring, square root method, completing the square and/or quadratic formula; (A)
8. solve polynomial equation; (B)
9. solve radical equations; (B)
10. solve equation containing rational exponents; (B)
11. solve absolute value equation; (B)
12. solve linear inequalities; (B)
13. solve compound inequalities; (B)
14. solve absolute value inequalities; (B)
15. state the domain and range of a relation; (C)
16. determine whether a relation is a function; (C)
17. evaluate function notation; (C)
18. identify intervals where a function is increasing, decreasing, or constant; (C)
19. identify even or odd functions; (C)
20. use graphs to locate relative maximum and/or minimum; (C)
21. evaluate piecewise functions; (C)

22. compute the slope of a line; (C)
23. graph a linear equation using t-tables, x- and y- intercepts, and/or slope-intercept form; (C)
24. write equation of lines in point-slope, slope-intercept, and standard form; (C)
25. write the equation of parallel and perpendicular lines; (C)
26. form the composition of functions; (C)
27. find the inverse of a function; (C)
28. find the distance between two points; (C)
29. find the midpoint of a segment; (C)
30. graph a circle in standard form; (C)
31. graph a circle in general form; (C)
32. write the equation of a circle in standard form; (C)
33. graph a parabola in standard form; (D)
34. graph a parabola in general form; (D)
35. graph exponential functions; (E)
36. applications of exponential functions, i.e. compound interest; (E)
37. convert from exponential to logarithmic form; (E)
38. convert from logarithmic to exponential form; (E)
39. evaluate logarithmic expressions with and without a calculator; (E)
40. graph logarithmic functions; (E)
41. apply the properties of logarithms to condense and expand expressions; (E)
42. solve exponential equations with the same base; (E)
43. solve exponential equations using natural logs; (E)
44. solve logarithmic equations; (E)
45. solve logarithmic equations using the product and/or quotient rule; (E)
46. solve a system of linear equations in two variables using substitution and/or addition; (F)
47. solve a system of linear equations in three variables; (F)
48. solve a nonlinear system of equations; (F)
49. solve a linear and nonlinear system of inequalities by graphing; (F)
50. graph an ellipse from standard form; (G) and
51. graph a hyperbola from standard form; (G)

Course Requirements: All students are required to take a comprehensive final exam. When this course is taken in an online environment, the department has established a minimum grade of 60% on the final exam required to earn a grade of "C" or higher in the course. If this minimum score is not obtained by the student, then the student shall refer to the policy outlined in the course syllabus which will supersede the course grading scale shown below.

Course Grading Scale:

90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
0 – 59 = F

Attendance Policy: The college attendance policy is available at http://www.bpcc.edu/catalog/current/academicpolicies.html

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams and/or clinical fees.

Nondiscrimination Statement: Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

Title VI, Section 504, and ADA Information
Angie Cao, Student and Disabilities Services Specialist
Student Services, F-254
6220 East Texas Street
Bossier City, LA 71111
Phone: 318-678-6511
Email: acao@bpcc.edu
Hours: 8:00 a.m. - 4:30 p.m. Monday - Friday, excluding holidays and weekends.

Equity/Compliance Coordinator
Teri Bashara, Director of Human Resources
Human Resources Office, A-105
6220 East Texas Street
Bossier City, LA 71111
Phone: 318-678-6056
Email: tbashara@bpcc.edu
Hours: 8:00 a.m. - 4:30 p.m. Monday - Friday, excluding holidays and weekends.