# Bossier Parish Community College
## Master Syllabus

**Course Prefix and Number:** MATH 111                          **Credit Hours:** 3-3-0

**Course Title:** Precalculus Algebra

**Course Prerequisites:** ACT score of 19 or higher, math placement test score, or a grade of "C" or higher in MATH 099.

**Textbook(s):** Lial, Hornsby, Schneider, and Daniels. <u>Precalculus,</u> 7th edition. Pearson, 2020. ISBN: 9780135925782

**Course Description:** A course in precalculus algebra using the graphing calculator. Topics include graphs and functions; quadratic equations and inequalities; theorems about zeros of polynomial functions; rational functions; inverse functions; exponential and logarithmic functions; systems of equations and inequalities; conics; sequences; series.

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

A. compute the slope of a line, write equations of lines, and graph equations of lines;
B. perform operations on polynomial and rational functions;
C. perform operations on inverse, exponential and logarithmic functions and equations;
D. solve systems of equations and inequalities;
E. graph the conics; and
F. evaluate geometric and arithmetic sequences and sum geometric and arithmetic series.

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. compute the slope of a line; (A)
2. write equations of lines; (A)
3. find domain and range of a function; (A)
4. graph functions; (A)
5. compute the difference quotient; (A)
6. form composite functions; (A)
7. find zeros of polynomial functions; (B)
8. graph polynomial functions; (B)
9. behavior of zeros of polynomial functions; (B)
10. graph rational functions; (B)
11. find asymptotes from rational functions; (B)
12. solve applications with variation; (B)
13. find the inverse of a function; (C)
14. evaluate and graph exponential functions; (C)
15. evaluate logarithms; (C)
16. graph logarithmic functions; (C)
17. use the properties of logarithms; (C)
18. solve exponential and logarithmic equations; (C)
19. solve a linear system of equations; (D)
20. solve a nonlinear system of equations; (D)
21. partial fraction decomposition; (D)
22. graph the ellipse, hyperbola, and parabola; (E)

27. find the sum of an arithmetic and geometric series; (F)
28. evaluate an arithmetic and geometric sequences; (F)
29. apply the binomial theorem; (F) and
30. use mathematical induction to prove a statement. (F)

**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
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Equity/Compliance Coordinator
Teri Bashara, Director of Human Resources
Human Resources Office, A-105
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Bossier City, LA 71111
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