MA150 **Precalculus** **Fall 2018**

COURSE DESCRIPTION

Equations and inequalities, functions and graphing ,polynomials, rational, exponential, logarithmic, and trigonometric functions and equations.

PREREQUISITES

Students who have a subtest score of 18 or above on the mathematics portion of the ACT may enroll in this course. Students who have successfully completed MA 111 or MA 112 may also enroll in the course.

COURSE OVERVIEW

This course is designed to prepare students for the successful study of calculus. It provides students with materials that focuses on key concepts from algebra and trigonometry while introducing additional topics and concepts that are not only necessary for the study of calculus, but for quantitative courses in allied disciplines as well. Students will be presented with the opportunity to discover how these concepts can be applied to a variety of problems. Emphasis will be placed on various types of functions including algebraic, trigonometric, and transcendental functions. Students are expected to spend a considerable amount of time solving problems to help them understand the concepts.

COURSE CONTENT

Text

Sisson, Paul. **Precalculus**. Hawkes Learning Systems/Quant Systems Inc.

Major areas of study

I. Number Systems
   - A. Set-builder and interval notation
   - B. Common subsets of real numbers
   - C. Components of algebraic expression
   - D. Complex Numbers

II. Equations and Inequalities
   - A. Linear equations and linear inequalities
   - B. Quadratics and “Quadratic Like” equations
   - C. Radical and Rational Equations

III. Functions and graphs
- A. Introduction to functions and relations
- B. Linear functions and graphs
- C. Quadratic functions and graphs
- D. Composition of functions
- E. Inverse functions
- F. The algebra of functions

IV. Polynomials and rational functions
- A. Polynomials functions of higher degree
- B. The Remainder Theorem and Factor Theorem
- C. Zeros of polynomials functions
- D. Rational functions and rational inequalities

V. Exponential and logarithmic functions

VI. Trigonometric functions and applications
- A. Trigonometric functions of angles
- B. Evaluating trigonometric functions
- C. Graphing trig functions
- D. Inverse trigonometric functions

VII . Additional Topics
- A. Systems of Equations
- B. Introduction to limits
- C. Derivatives
- D. Partial Fraction Decomposition

COURSE OBJECTIVES

Upon completion of this course students will be able to:
- (1) Represent functions by numerical, graphical, and symbolic means.
- (2) Understand the relationship between functions and their inverses.
- (3) Use graphs to analyze the behavior of functions.
- (4) Link mathematical concepts to real - world situations.
- (5) Solve equations involving trigonometric and transcendental expressions.
- (6) Use proper vocabulary and sound mathematical notation.
- (7) Use technology to solve problems.

MAJOR STUDENT ACTIVITIES

(1) Students are expected to have a comprehensive understanding of the content areas of study as a result of the materials being covered. Therefore, they are expected to read intensively from the textbook and spend a considerable amount of time solving problems to help understand the concepts. **Every student must have the textbook and must bring it to class daily**.

(2) Students are expected to pass examinations based on classroom lectures, lab, and homework assignments. For any student who could not take the test, a **make-up test must** be taken at the time designated by the instructor. Notification must come on or before the day of the test. Failure to makeup a test results in a grade of **zero**.

(3) Random quizzes will be given. **Quizzes cannot be made up.**

(4) Students are strongly encouraged to participate in all class activities and assignments with both the instructor and other students. This could earned extra points toward the daily average (replace up to two homework assignments).

(5) Each student will be required to take a comprehensive final examination.

(6) All homework assignments must be complete and submitted at the beginning of the beginning of class. **Incomplete or late** work will not be accepted unless prior preparations have been made with the instructor. An excused absence does not excuse students for any assignments that was submitted on that day.

(7) A notebook should be maintained which contains lecture notes and all homework and practice exercises properly labeled. There may be random notebook checks. A binder or folder should be used as the notebook.

EVALUATION AND GRADING PROCEDURES

The followings will be used to determine the final grade.

Content Examinations and Special Assignments.....60%
Final Exam 10%
Quizzes, Lab and Homework (**Hawkes)**.....30% (**15%**)

Grading Scales:

SCORE	GRADE
90-100	A
80-89	B
70-79	C
60-69	D
BELOW 60	F

ATTENDANCE POLICY

It is necessary for students to attend every class meeting. Any student who misses more than the allowed number of absences will be subject to a decrease in their final grade. Students are totally responsible for getting class materials and assignments on the day they were absence.

TECHNOLOGY

This text is accompanied by a *cd* that serves as supplementary material to the text. This *cd* (**Hawkes Learning System: Pre -Calculus**) is a comprehensive tutoring software package that will be used by students to complete homework assignments and as a tutorial. Students will also be presented with opportunities to use calculators and ***Mathematica*** software to discover alternative approaches to problem solving and to verify results of other solution methods.

SPECIAL NEEDS STATEMENTS

Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability(medical, physical, psychiatric, learning , vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities(SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester. If you are determined to be eligible after our confidential consultation, you will be provided with a Memo of Accommodations that must be submitted to each of your instructors.

INCOMPLETE

Only students with acceptable excuses who could not complete the course requirements within the semester will be considered for a grade of incomplete. The student must have a passing grade (**C or better**) up to the withdrawal date. Otherwise, students should drop or withdraw from the class.

Others will be given in class as needed.

Note: Cell phones should not be used at any time during the class period. It is preferred that cell phones not be visible.

Office Hours are posted on the door of **Office 136.**

This document does not constitute a contract with the university. It contains guidelines and I reserve the right to make changes on this syllabus as needed.