El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA **Mathematics**

COURSE RUBRIC AND NUMBER **NCBM 0142**

COURSE TITLE **Non-Course Based Instruction for Math**

COURSE CREDIT HOURS **1 1 : 0**
Credits Lec Lab

I. Catalog Description

Provides a review of the material covered in Fundamentals of Statistics. This material is reordered for a "just-in-time" to complement the Math 1342 material. Students taking this course should have a score of 344-349 or higher on the TSI Assessment. This course is a Non-Course Base Option that supports students whose placement scores indicate that they can succeed in MATH 1342 with co-enrollment into NCBM 0142. **Prerequisite: Score of 344-349 on the TSI Assessment. Corequisite: MATH 1342 (can be taken concurrently). (1:0.)**

II. Course Objectives

Upon satisfactory completion of the course, the student will be able to solve mathematical problems that relate to:

A. Unit I. Introduction to Statistics

1. Discuss the role of statistics.
2. Identify the processes for data collection and data analysis.
3. Describe data using graphical methods.
   a. For a given set of data, organize and summarize data by constructing various graphs such as line plots, stem and leaf plots, histograms, line graphs, pie charts, frequency polygons, and pictographs.
   b. Interpret data presented in the various graphs.
4. Describe data using numerical methods.
   a. For a given set of data, determine measures of central tendency such as the mean, median, and mode.
   b. For a given set of data, determine measures of variation such as standard deviation, range, and outliers.
   c. For a given set of data, determine measures of position such as quartiles and percentiles.

B. Unit II. Probability

1. Discuss basic probability concepts.
2. Utilize basic counting principles.
   a. Use the multiplication principle.
   b. Use factorial notation to evaluate permutations and combinations.
3. Calculate the classical and empirical probabilities of an event.
4. Solve problems involving probabilities, odds, and expected values.

C. Unit III. Discrete and Normal Probability Distributions

1. Compute discrete probability distributions.
2. Introduce the normal and binomial sampling distributions and find probabilities.
3. Construct confidence intervals for an estimated sample statistic for mean, proportions, variance, and standard deviation.

D. Unit IV. Hypothesis Testing with One and Two Samples

1. Perform hypothesis testing using a single sample for mean, proportions, variance, and standard deviation.
2. Compare two populations or treatments using hypothesis testing.
3. Summarize bivariate data.
4. Use simple linear regression and correlation with inference methods.
5. Analyze data using goodness-of-fit tests, independence tests, and analysis of variance (ANOVA).

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
4. Explain the role of probability in statistics.
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

IV. Evaluation

There will be at least three in class exams (100 points each) and one required in class comprehensive final exam to evaluate student learning for the course. Quiz grades and homework grades may also be used in the evaluation of the final grade, if the instructor so chooses. A comprehensive final exam is mandatory for all students**.** Students will be assessed on Unit I-Unit IV and given a comprehensive final exam.

The course grade will be assigned based on the following scale.

CR (Credit)….100-70
NC (No Credit)…Below 69.

I and W Grades: The student is responsible for completing the necessary forms for I or W (except as noted below). I and W grades may be assigned whenever appropriate deadlines are met. To be eligible for an I, the student must complete 80% of the course with at least a 75% average. The proper forms must also be signed by both the student and the instructor before being submitted to the Registrar.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815);and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.