Bossier Parish Community College
Master Syllabus

Course Prefix & Number: MATH 218 **Credit Hours:** 3-3-0

Course Title: Elementary Statistics

Course Prerequisites: A grade of "C" or higher in MATH 117 and MATH 217.

Textbook(s): BPCC Custom Manipulative Kit, ISBN: 9780321854094
Billstein, Libeskind and Lott. A Problem Solving Approach to Mathematics for Elementary School Teachers, 12th edition, Pearson, 2015. ISBN: 9780321990594

Course Description: This course is designed for elementary education majors. The emphasis of the course is statistics, and probability. Topics include: collecting a set of data, methods of organizing data, the center of data; the variability of data; standardized scores; sampling; abuses of statistics; probability; theoretical vs. experimental probability; conditional probability; counting techniques; geometric probability; simulations in probability; and normal distribution.

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

A. understand the concept of probability;
B. understand the concept of odds, and counting principles;
C. understand descriptive statistics; and
D. determine the measures of central tendency and variation and recognize potential abuses of statistics;

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. express understanding of basic terminology related to data collection and analysis; (A)
2. apply the definition of probability of an event; (A)
3. apply properties of probability; (A)
4. determine if events are mutually exclusive; (A)
5. find the complement of an event; (A)
6. find the probability of non-mutually exclusive events; (A)
7. draw a tree diagram for an experiment; (A)
8. find the probability of multistage experiments; (A)
9. apply the multiplication rule for probabilities; (A)
10. determine if events are independent; (A)
11. solve applications using probabilities; (A)
12. find the geometric probability of an event; (A)
13. use a simulation to determine a probability; (A)
14. apply the definition of odds; (B)
15. compute the odds given a probability; (B)
16. compute the probability given the odds; (B)
17. calculate conditional probabilities; (B)
18. calculate the expected value of an event; (B)
19. define factorial; (B)
20. use factorials to compute the number of outcomes; (B)
21. recognize combinations/permutations; (B)
22. count the number of outcomes using permutations; (B)

23. count the number of outcomes using combinations; (B)
24. apply counting principles; (B)
25. express understanding of basic terminology related to data collection and analysis; (C)
26. display/interpret data in a pictograph; (C)
27. display/interpret data in a dot plot; (C)
28. display/interpret data in a stem and leaf plot; (C)
29. display/interpret data in a frequency table; (C)
30. display/interpret data in a histogram; (C)
31. display/interpret data in a bar graph; (C)
32. display/interpret data in a pie chart; (C)
33. display/interpret data in a line graph; (C)
34. determine if there is a correlation between two values; (C)
35. recognize positive and negative association between two values; (C)
36. choose the best method to display a data set; (C)
37. calculate the arithmetic mean of a data set; (D)
38. calculate the median of a data set; (D)
39. calculate the mode of a data set; (D)
40. choose the most appropriate measure of central tendency; (D)
41. calculate the range of a data set; (D)
42. find the five-number summary of a data set; (D)
43. calculate the interquartile range of a data set; (D)
44. display/interpret data in a box-and-whisker plot; (D)
45. calculate outliers of a data set; (D)
46. calculate the variance of a data set; (D)
47. calculate the standard deviation of a data set; (D)
48. compare data sets; (D)
49. analyze normal distributions; (D)
50. calculate percentiles; (D)
51. recognize biased questions; (D)
52. recognize random samples; (D) and
53. recognize distorted/misleading graphs; (D)

Course Requirements: All students are required to take a final exam.

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.

COORDINATOR FOR SECTION 504 AND ADA
Angie Cao, Student and Disability Services Specialist
Disability 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.