Northern Star Online Syllabus: Probability & Statistics

Title: Probability & Statistics	**Credits**: .25; .33; .5
Pre-requisites: Algebra I	**Course Number: 77010**

Course Description:
This course focuses on two main area of Mathematics:
1. Probability
   - The basics of probability.
   - Use organizational strategies to calculate possible outcomes for events.
   - Use mathematical methods to solve number of outcomes and probabilities.
   - Learn about expected value and how it relates to our world today.
2. Statistics
   - Learn the vocabulary of statistics
   - Understand and use proper techniques and data analysis methods to conduct a statistical study.
   - Use different methods to display data.
   - Draw conclusions and identify significant trends using data.

Course Goals and Objectives:
To better understand how probability and statistics relates to the world around us, to be aware of how these concepts impact our everyday lives, and to be able to better apply these concepts to our everyday lives.

Semester (0.5 Credit) - Two quarters and meets state Prob & Stats requirement.
Quarter 1 (0.25 Credit) - Units 1-3 covering Probability*
Quarter 2 (0.25 Credit) - Units 4-7 covering Statistics*

* Completing only one of the quarters listed above (0.25 credit) does not fully meet the Minnesota graduation requirement for Probability & Statistics.

Trimester (.33 Credit) - Units 1-7 and meets state Prob & Stats requirement.

Topic Outline:
Chapter 1 - Events, Outcomes, Sample Space, Tree Diagrams, Fundamental Counting Principle, Permutations, and Combinations.
Chapter 2 - Basic Probability, Independent Events, Multiple Events, Mutually Exclusive Events, Venn Diagrams, Tree Diagrams, Probability Models, and Two-Way Tables.
Chapter 3 - Expected Value, Random Digit Tables, Simulations,and Fair Games.
Chapter 4 - Vocabulary of Statistics, Types of Studies, Random Digit Tables, Margin of Error, Confidence Statements, Experimental Design.

Chapter 5 - Mean, Median, Mode, Range, Graphing Methods for Univariate Data, Shape of Data, Outliers, and Percent Change.
Chapter 6 - Graphing Bivariate Data, Correlation, and Best-Fit Lines.
Chapter 7 - Density Curves, Normal Curves, Standard Deviation, Empirical Rule, and Z-Score.

Required books and/or educational materials:

1. Required Textbook: Anoka-Hennepin Probability & Statistics **1st Edition** (Engelhaupt, Haney, & Johnson). This is available in digital format within the course, or can be downloaded to print.
2. Highly Recommended: TI-83 or TI-84 Graphing Calculator. If you are unable to get access to a TI-83 or TI-84 Graphing Calculator, please inform your instructor immediately once you've begun the course so that proper arrangements can be made.

Minimum Technical Requirements:

Final Exam (date, time and location if one is scheduled): Not scheduled

Extra Credit Options if Available: No extra credit is available in this course

Assessment of Student Work

Grading Policy

You will be graded as follows: [This may be adjusted by teachers]

Grade	Min Percent
A	93
A-	90
B+	87
B	83
B-	80
C+	77
C	73
C-	70
D+	67

D	63
D-	60

Policy for Missed Exams and Late Assignments*:*

Please see NSO Policy for Late Assignments: http://bit.ly/nsolateworkpolicy

Policy for Addressing Academic Dishonesty:

Minnesota Academic Standards Alignment

State Standards [if applicable] - If the entire course is completed (all units, all lessons), the graduation requirements for Probability & Statistics for the state of Minnesota are met.
National Standards [if applicable]

Course Instructor and Communications

Please see: http://bit.ly/nsostudentcomm

Student Attendance Expectations: Students must submit work each week. The standard NSO policy of not submitting graded work for more than 15 days will result in the student being removed from the course.
Format and Frequency of Progress Reports: Standard NSO progress reporting is given. MW - Student is not on pace to complete course by their registered end date. NR1 - Student has not submitted work for grading in the past 4-7 days. NR2 - Student has not submitted work for grading in the past 8-14 days. NR3 - Student has not submitted work in 15+ days and will be removed from the course. OK - Student appears to be on pace to complete the course by the scheduled end date.
Final Grades and Submissions: