

## SCOPE AND SEQUENCE CHART

<b>UNIT 1 DESCRIPTIVE STATISTICS</b>	
<b>LESSON</b>	<b>OBJECTIVES</b>
<p><b>CHAPTER 1</b> <b>Overview of Statistics</b></p> <p>Statistics in Everyday Life</p> <p>Population and Sample Parameter and Statistics Variables Sampling Techniques Data Collection</p>	<p>Define <i>statistics</i></p> <p>Enumerate the use and importance of statistics</p> <p>Give some applications of statistics</p> <p>Differentiate descriptive statistics from inferential statistics</p> <p>Define <i>population</i> and <i>sample</i></p> <p>Define <i>parameter</i> and <i>statistic</i></p> <p>Classify variables according to type and scale of measurement</p> <p>Explain the different sampling techniques</p> <p>Describe the different methods of data collection</p>
<p><b>CHAPTER 2</b> <b>Data Organization</b></p> <p>Data Presentation Textual Presentation Tabular Presentation</p>	<p>Present data in textual form</p> <p>Identify the characteristics of a good table</p> <p>Construct one-way and two-way contingency tables</p> <p>Construct frequency distribution tables for qualitative and quantitative data</p>

LESSON	OBJECTIVES
Graphical Presentation	Identify the characteristics of a good graph Identify the proper uses and possible misuses of graphs Construct different kinds of graphs
<b>CHAPTER 3</b> <b>Numerical Measures</b>  Measures of Central Tendency Measures of Variability Measures of Position  Measures of Skewness and Kurtosis  Measure of Linear Relationship Between Two Variables	Calculate the different measures of central tendency Calculate the different measures of variability Compute quartiles, deciles, and percentiles Compute the $z$ -score for a given data Construct a boxplot Compute the measures of skewness and kurtosis State Chebyshev's inequality Describe linear relationships between two variables
<b>UNIT 2 COUNTING TECHNIQUES AND PROBABILITY</b>	
<b>CHAPTER 4</b> <b>Counting Techniques</b>  Fundamental Principle of Counting Permutations Combinations	State and apply the fundamental principle of counting Differentiate permutations and combinations State and apply the rules of permutation and combination Model real-life situations using counting techniques Formulate and solve real-life problems involving counting techniques

LESSON	OBJECTIVES
<p><b>CHAPTER 5</b> <b>Probability</b></p> <p>Experiments, Sample Spaces, and Events</p> <p>Events and Operations</p> <p>Assigning Probability</p>	<p>Define basic terms in probability</p> <p>Perform experiments involving probability</p> <p>Calculate probabilities using a <i>priori</i> and a <i>posteriori</i> approaches</p> <p>Explain the law of large numbers</p> <p>Define and give examples of mutually exclusive and independent events</p> <p>Compute probabilities of events given certain conditions</p> <p>Enumerate the probability rules and apply them to solve problems involving chances</p> <p>Determine the conditional probability of events</p> <p>Solve real-life problems using probability</p> <p>Simulate real-life situations that involve counting and chance</p>
<p><b>UNIT 3 PROBABILITY DISTRIBUTIONS</b></p>	
<p><b>CHAPTER 6</b> <b>Random Variables and Probability Distributions</b></p> <p>Random Variables</p>	<p>Define <i>random variable</i> and explain its usefulness in computing probabilities of events</p> <p>Differentiate <i>discrete random variables</i> from <i>continuous random variables</i></p> <p>Enumerate the properties of a probability distribution</p> <p>Compute probabilities corresponding to a given random variable</p>



<b>LESSON</b>	<b>OBJECTIVES</b>
<p>Probability Mass Functions Probability Density Functions</p> <p>Mean and Variance of a Discrete Random Variable</p> <p>Applications of Expected Value</p>	<p>Construct the probability mass function for a given discrete random variable</p> <p>Draw the probability histogram for a probability mass function</p> <p>Compute and interpret the mean and variance of a probability distribution</p> <p>Apply the concepts of the mean and variance of probability distributions in real-life situations</p>
<p><b>CHAPTER 7</b> <b>Special Probability Distributions</b></p> <p>Discrete Probability Distributions</p> <p>Continuous Probability Distributions</p> <p>Normal Approximation to the Binomial Distribution</p>	<p>Name some commonly used discrete probability distributions and enumerate their properties</p> <p>State examples of statistical experiments yielding the special types of discrete probability distributions</p> <p>Identify the appropriate discrete probability distribution for a given discrete random variable</p> <p>Compute probabilities, means, and variances of special probability distributions</p> <p>Name some commonly used continuous probability distributions and enumerate their properties</p> <p>Compute probabilities, means, and variances of special continuous probability distributions</p> <p>Name examples of normally distributed real-life data sets and apply the empirical rule to these data sets</p> <p>Compute probabilities using a normal probability table</p> <p>Determine percentiles from a normal probability table</p> <p>Compute normal approximation to the binomial probability</p>

## UNIT 4 INFERENTIAL STATISTICS

LESSON	OBJECTIVES
<p><b>CHAPTER 8</b> <b>Sampling Distributions and Estimation</b></p> <p>Sampling Distribution of the Sample Mean <math>\bar{x}</math></p> <p>Estimation</p>	<p>Construct the sampling distribution of the sample mean <math>\bar{x}</math></p> <p>Find the mean and variance of the sampling distribution of <math>\bar{x}</math></p> <p>Apply theorems on the sampling distribution of <math>\bar{x}</math> in solving word problems</p> <p>Obtain point and interval estimates for means and proportions of one and two populations</p> <p>Draw conclusions and make inferences based on the constructed confidence intervals</p> <p>Determine the appropriate sample size necessary to be able to make inferences about the population</p>
<p><b>CHAPTER 9</b> <b>Tests of Statistical Hypothesis</b></p> <p>Statistical Hypotheses: An Overview</p> <p>Steps in Hypothesis Testing</p> <p>Testing Hypothesis About Parameters from One Population</p> <p>Testing Hypothesis About Parameters from Two Populations</p>	<p>Formulate null and alternative hypotheses</p> <p>Identify the types of errors that might be committed during hypothesis testing and their consequences</p> <p>Perform appropriate statistical tests involving the mean and proportion of one or two populations</p> <p>Draw conclusions and make inferences about the populations based on the tests of hypotheses conducted</p>





LESSON	OBJECTIVES
<p><b>CHAPTER 10</b> <b>Linear Regression and Correlation</b></p> <p>Linear Correlation</p> <p>Simple Linear Regression Analysis</p>	<p>Illustrate the nature of bivariate data</p> <p>Construct a scatter plot</p> <p>Describe shape (form), trend (direction), and variation (strength) based on a scatter plot</p> <p>Calculate the <i>Pearson product-moment correlation coefficient</i> and interpret</p> <p>Draw the best-fit line on a scatter plot</p> <p>Calculate the slope and <i>y</i>-intercept of the regression line and interpret</p> <p>Predict the value of the dependent variable given the value of the independent variable</p> <p>Solve problems involving correlation and regression analysis</p> <p>Use regression analysis in modelling real-life data</p> <p>Calculate the <i>Spearman rank correlation coefficient</i> and interpret</p>