The University of Texas Rio Grande Valley

College of Business and Entrepreneurship - Department of Information Systems
QUMT 6303 Business Foundations - Fall 2021 Module I - CRN 13143

Instructor: Dr. David Alvarado
Office Hours: TR, 11:00am - 2:00pm (Zoom).
E-mail: david.alvarado@utrgv.edu (preferred)

COVID-19 RESOURCES:
Please visit the UTRGV COVID-19 protocols web page for the most up-to-date COVID-19 campus information and resources. The COVID-19 Frequently Asked Questions (FAQs) web page offers additional guidance to specific questions. To submit a question for the FAQ, please email WelcomeBack@utrgv.edu.

UTRGV VACCINE PORTAL
UTRGV Students are eligible to receive the COVID-19 Vaccine. Students may access and complete their vaccine profile via the UTRGV Vaccine Portal. For additional information on the COVID-19 Vaccine, please visit the UTRGV Vaccine web page.

COURSE DESCRIPTION:

The purpose of this course is to educate students in the field of business research and its application as a management decision tool. Business research is a practical, applied research tool utilized in order to obtain knowledge in the decision-making process. This course is designed to educate students to be efficient users of research, effective managers of research projects, and to improve students' research skills.

RESPONSE TIME:

Generally, I will respond to emails within 24 hours of receiving them. If I plan to be away from my computer for more than a couple of days, I will let you know in advance. Any technical questions can be referred to Blackboard Support. I will update the online grades each time a grading session has been complete—typically 3 days following the completion of an activity. You will see a visual indication of new grades posted on your Blackboard home page under the link to this course.

Prerequisite: Admission to MBA program

TEXTBOOK & COURSE MATERIALS:

Required Textbook (or eBook) and WebAssign Access for:
Essentials of Statistics for Business & Economics, 9th Edition
David R. Anderson; Dennis J. Sweeney; Thomas A. Williams; Jeffrey D. Camm; James J. Cochran; Michael J. Fry; Jeffrey W. Ohlmann

You may choose from the following options:

•Bundle: Essentials of Statistics for Business and Economics, Loose-leaf Version + WebAssign Printed Access Card, Single Term (Essentials) **9780357252956**
•Access through Cengage Unlimited
•WebAssign: Essentials of Statistics for Business and Economics **9780357031421**
•WebAssign for Essentials of Statistics for Business & Economics, Single-Term Printed Access Card **9780357031438**

COURSE OBJECTIVES:

1. Upon completion of this course, the students will be able to list applications of statistics in business, differentiate between descriptive and inferential statistics, and classify numbers by scales of measurement.
2. Upon completion of this course, the students will be able to construct the frequency distribution table and create graphs and charts using Excel and R for a dataset.
3. Upon completion of this course, the students will be able to compute and interpret numerical measures for a business dataset.
4. Upon completion of this course, the students will be able to understand, compute, and apply probabilities in business life.
5. Upon completion of this module, the students will be able to compute probabilities, expected value, variance and standard deviation for discrete probability distributions, and understand the applications of Binomial and Poisson probability distribution in business fields.
6. Upon completion of this course, the students will be able to compute probabilities for Uniform and Normal distributions, and understand their applications in business fields.
7. Upon completion of this course, the students will be able to understand a variety of sampling methods and apply central limit theorem to business fields.
8. Upon completion of this course, the students will be able to estimate a population mean from a sample mean and determine sample size for an interval estimate of a population mean.
9. Upon completion of this course, the students will be able to understand Type I and Type II error, and conduct hypothesis testing of one population mean when σ is known or unknown.
10. Upon completion of this course, the students will be able to conduct hypothesis testing of two population means and analysis of variance.
11. Upon completion of this course, the students will be able to conduct hypothesis testing and determine confidence intervals for $p1$-$p2$, and test the independence of two variables.
12. Upon completion of this course, the students will be able to conduct simple linear regression analysis using Data Analysis in Excel and R, interpret the outputs, and predict using the outputs.
13. Upon completion of this course, the students will be able to conduct multiple linear regression analysis in Excel and R, and interpret the outputs.

The detailed course learning goals and outcomes are listed in the modules for each week in Appendix.

TECHNICAL REQUIREMENTS:

Computer Hardware
To participate in this online course, you should have easy access to a computer less than 5-years old with high-speed internet connection. To ensure you are using a supported browser and have required plug-ins please refer to Supported Browsers, Plugins & Operating Systems for Blackboard Learn from Blackboards resource page.

Student Technical Skills:
You are expected to be proficient with installing and using basic computer applications and have the ability to send and receive email attachments.

Software:

- Mozilla's Firefox, Google Chrome, Safari, or Microsoft Edge
- Microsoft Office 365
- The R Project for Statistical Computing (R and RStudio)

Blackboard Support Contact Information:
If you need Blackboard support at any time during the course or to report a problem with Blackboard you can:

- Visit the Blackboard Student Help Site
- Submit a Blackboard Help Ticket
- UTRGV's Blackboard Support:

Brownsville Campus	**Edinburg Campus**
• Location: Rusteberg Hall Room 108 • Phone: 956-882-6792	• Location: Education Building Room 2.202 • Phone: 956-665-5327

Hours of Operation

- **Monday - Thursday, 7:30 a.m. - 7:00 p.m.**
- **Friday, 8:00 a.m. - 6:00 p.m.**

COURSE ORGANIZATION & ONLINE TOOLS:

Course Structure:
This course will be delivered entirely online through the course management system Blackboard Learn. You will use your UTRGV account to login to the course from the My.UTRGV.edu site and under applications click on Blackboard Learn.

The course is organized into 7 weeks of instruction, as outlined in the Course Schedule and Due Dates below. Each week is listed by its main topic and contains required readings, videos, mini lectures, discussion forum assignments, individual and/or collaborative assignments that you complete working in teams.

Discussion Forums

You will find the following discussion forums in the course Blackboard site:

- General Help: Post any questions or comments you may have about course mechanics or technical issues to this forum.

Forums versus Email

If you have a question about course content or mechanics, I encourage you to post it to the General Help discussion forums. Doing so gives students in the course an opportunity to help one another and allows everyone to benefit from answers to your questions. Of course, don't hesitate to email me directly at david.alvarado@utrgv.edu if your concern is of a personal nature.

My role in discussion forums is that of a facilitator. I will occasionally correct misconceptions and/or redirect conversations that need redirecting. I may also post comments following the completion of discussion indicating my general impressions of the comments and conclusions.

Assignments

Unless indicated otherwise in module materials, you will submit all assignments to its respective assignments area.

Graded Assignments

Assignment 1	100
Assignment 2	100
Assignment 3	100
Assignment 4	100
Assignment 5	100
Assignment 6	100
Assignment 7	100
Quiz 1	50
Quiz 2	50
Quiz 3	50
Quiz 4	50
Quiz 5	50
Quiz 6	50
Quiz 7	50

Total……. 1050

90 percent and up	A
80 to 89 percent	B
70 to 79 percent	C
60 to 69 percent	D
59 percent and below	F

TOPIC OUTLINE/SCHEDULE:

Important Note: Activity and assignment details will be explained in detail within each week's corresponding weekly content area. If you have any questions, please contact the instructor.

Tentative Schedule:

Module	Topic	Chapters
1	Data and Statistics	1
2	Descriptive Statistics: Tabular and Graphical, Presentations Descriptive Statistics: Numerical Measures	2, 3
3	Introduction to Probability, Discrete Probability Distributions	4, 5
4	Continuous Probability Distributions, Sampling and Sampling Distributions, Interval Estimation	6, 7, 8
5	Hypothesis Tests, Inferences about Means and Proportions with Two Populations	9, 10
6	Inferences about Population Variances Comparing Multiple Proportions, Test of Independence and Goodness of Fit, Experimental Design and Analysis of Variance	11, 12, 13
7	Simple Linear Regression, Multiple Linear Regression	14, 15

LATE WORK POLICY

Prior arrangements must be made with the instructor, whenever possible. To be fair to all other students, the weight of the missed test will be added to the next test.

This arrangement will only be given to students who are able to produce an official document within a reasonable time (within 3 days) period. Examples of official documents are medical reports, accident or traffic violations, and other unforeseen circumstances. Official documents should be written in English. All non-United States documents must be authenticated and verified. No late submission will be accepted without any official documents. Late submissions with acceptable official excuses will be given full credit. However, they must be submitted within a reasonable time period.

Viewing Grades in Blackboard

Points you receive for graded activities will be posted to the Blackboard Grade Book. Click on the My Grades link on the left navigation to view your points.

The instructor will update the online grades each time a grading session has been complete—typically **3** days following the completion of an activity. You will see a visual indication of new grades posted on your Blackboard home page under the link to this course.

COURSE POLICIES

Participation

Online courses require your active participation. Here are some tips for success:

- In discussion forums, you learn from one another by posing questions, justifying your comments, and providing multiple perspectives. When you prepare for discussions through thoughtful reflection, you contribute to your own successful learning experience as well as to the experience of your peers.
- Log in to the course frequently (at least several times per week for long semesters and daily for summer sessions) and check the announcements. This will keep you apprised of any course updates, progress in discussions, assignment information, and messages requiring immediate attention.
- Be aware of and keep up with the Course Schedule in the Syllabus.

Build Rapport

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructor know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructor when difficulties arise during the semester so that we can help you find a solution.

Complete Assignments

All assignments for this course will be submitted electronically through Blackboard unless otherwise instructed. Assignments and quizzes must be submitted by the given deadline or special permission must be requested from instructor *before the due date*. Extensions will not be given beyond the next assignment except under extreme circumstances.

Communication Skills

All students must have adequate writing skills to communicate content in a professional and concise manner. Students must be proficient in their written presentations including strategies for developing ideas, citing scholarly references, writing style, wording, phrasing, and using language conventions. Students must follow APA guidelines, use non-racist and non-sexist language, and include sufficient references to support their thesis and ideas in the paper.

Netiquette

Netiquette describes the code of conduct for an online environment. It ensures respect for others and prevents misunderstandings or unintentional offenses to others. The netiquette described here is amended to ensure your success in this course.

- When you are typing or submitting a response, do not use all capital letters (caps). Caps is equal to SHOUTING YOUR MESSAGE.
- Although it is customary to use acronyms (ex. ROFL - rolling on floor laughing, BTW - by the way, or FYI - for your information) when chatting online, try to avoid using these. There may be those in this course who are not as experienced as you and may miss out on understanding.
- Although you are encouraged to participate and ask questions, it is asked that you do not spam other users (SPAM refers to unwanted or excessive email). Before sending mass emails, consider using the discussion board to post general inquiries or requesting assistance from your instructor.

Time Commitment

Online courses are typically just as time intensive, and may be more rigorous than traditional courses. Many students claim that online courses require more time and commitment. As you begin this course, you would be wise to schedule 8 or more hours per week for studying materials and completing assignments.

Falling behind in this course is particularly problematic because the concepts we cover are cumulative. This means that not becoming proficient with information and objectives presented and assessed in a particular week can lead to low scores for that week as well as in subsequent weeks.

UTRGV POLICY STATEMENTS Additional policy statements are optional, such as those covering attendance, academic integrity, and course drop policies.

STUDENTS WITH DISABILITIES:
Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive reasonable academic accommodations should contact **Student Accessibility Services (SAS)** for additional information. In order for accommodation requests to be considered for approval, the student must apply using the *mySAS* portal. and is responsible for providing sufficient documentation of the disability to SAS. Students are required to participate in an interactive discussion, or an intake appointment, with SAS staff. Accommodations may be requested at any time but are not retroactive, meaning they are valid once approved by SAS. Please contact SAS early in the semester/module for guidance. Students who experience a broken bone, severe injury, or undergo surgery may also be eligible for temporary accommodations.

Pregnancy, Pregnancy-related, and Parenting Accommodations
Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) should submit the request using the form found at https://www.utrgv.edu/pregnancyandparenting for review by **Student Accessibility Services.**

Student Accessibility Services:
Brownsville Campus: Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at ability@utrgv.edu.

Edinburg Campus: Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD:
Students are encouraged to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about:

Fall Module 1 (7 weeks)	October 6-12, 2021
Fall Regular Term 2021	November 12- December 1, 2021
Fall Module 2 (7 weeks)	December 1-7, 2021

SEXUAL MISCONDUCT and MANDATORY REPORTING:
In accordance with UT System regulations, your instructor is a "Responsible Employee" for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity (OIED@utrgv.edu) any instance, occurring during a student's time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and sexual harassment, about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at (956) 665-8287, (956) 882-8282, or OVAVP@utrgv.edu.

COURSE DROPS:
According to UTRGV policy, students may drop any class without penalty earning a grade of DR (drop) until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the "3-peat rule" and the "6-drop" rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

STUDENT SERVICES:
Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Student Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (956) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor's office hours. University Resources include the Advising Center, Career Center, Counseling Center, Learning Center, and Writing Center. The centers provide services such as tutoring, writing help, counseling services, critical thinking, study skills, degree planning, and student employment. In addition, services such as the Food Pantry are also provided. Locations are listed below.

Center Name	Brownsville Campus	Edinburg Campus
Advising Center AcademicAdvising@utrgv.edu	BMAIN 1.400 (956) 665-7120	ESWKH 101 (956) 665-7120
Career Center CareerCenter@utrgv.edu	BCRTZ 129 (956) 882-5627	ESSBL 2.101 (956) 665-2243
Counseling Center Counseling@utrgv.edu Counseling and Related Services List	BSTUN 2.10 (956) 882-3897	EUCTR 109 (956) 665-2574
Food Pantry FoodPantry@utrgv.edu	BCAVL 101 & 102 (956) 882-7126	EUCTR 114 (956) 665-3663
Learning Center LearningCenter@utrgv.edu	BMSLC 2.118 (956) 882-8208	ELCTR 100 (956) 665-2585
Writing Center WC@utrgv.edu	BUBLB 3.206 (956) 882-7065	ESTAC 3.119 (956) 665-2538

Modules	Objectives	Technologies
Module1	OBJECTIVE: Upon completion of this module, the students will be able to list 5 applications of statistics in business such as Marketing, Management, Finance or Accounting with no more than 1 incorrect or unrelated.	Computer Browser to access class materials BB Learn- where class materials are located BB- Learn Discussion Boards for discussions Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to correctly identify which ones are descriptive and which ones are inferential statistics for given business scenarios with accurate rate of no less than 80%.	Computer Browser to access class materials BB Learn- where class materials are located BB- Learn Discussion Boards for discussions Microsoft Office WebAssign R and RStudio

	OBJECTIVE: Upon completion of this module, the students will be able to identify which ones are respectively quantitative or qualitative data for given business scenarios with accurate rate of no less than 80%.	Computer Browser to access class materials BB Learn- where class materials are located BB- Learn Discussion Boards for discussions Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to identify which ones are nominal, ordinal, interval or ratio data for given business scenarios with accurate rate of no less than 80%.	Computer Browser to access class materials BB Learn- where class materials are located BB- Learn Discussion Boards for discussions Microsoft Office WebAssign R and RStudio
Module 2	OBJECTIVE: Upon completion of this module, the students will be able to construct a frequency distribution table including class interval, frequency, relative frequency, cumulative frequency and cumulative relative frequency for a given dataset with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to, following the Bar Chart Rubric, create a bar chart using Excel and R for a given business dataset with accurate rate of no less than 80%.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to, following the Pie Chart Rubric, create a pie chart exhibiting category name, percentage and value using Excel and R for a given dataset with accurate rate of no less than 80%.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to create a stem and leaf chart for a given dataset with accurate rate of no less than 80%.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio

	OBJECTIVE: Upon completion of this module, the students will be able to compute column percentages and row percentages for a given crosstabulation with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to, following the Scatter Plot Rubric, create a scatter plot using Excel and R for a given business dataset.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to identify the most appropriate chart or graph among histogram, ogive, bar, pie, dot, pareto, stem and leaf, and scatter plot for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute numerical measures of location including mean, median, mode, percentile and quartile for an ungrouped dataset with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute numerical measures of variability including range, interquartile range, variance, standard deviation and coefficient of variation for ungrouped datasets with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio

	OBJECTIVE: Upon completion of this module, the students will be able to compute numerical measures of distribution shape including skewness, z-score, five points of box-plots for ungrouped datasets with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio

	OBJECTIVE: Upon completion of this module, the students will be able to interpret numerical measures of association between two variables with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute mean, variance and standard deviation of grouped data using Excel spreadsheet and R with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute mean, variance and standard deviation of grouped data using Excel spreadsheet and R with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
Module 3	OBJECTIVE: Upon completion of this module, the students will be able to compute event probabilities with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute complement of an event, union and intersection of two events, and conditional probabilities for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to identify and verify mutually exclusive events and independent events with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign

		R and RStudio

	OBJECITVE: Upon completion of this module, the students will be able to apply Bayes' theorem and compute probabilities for business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine expected value, variance and standard deviation of discrete probability distribution with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to list four properties of binomial experiment with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio BB Learn Discussion Boards for discussions
	OBJECTIVE: Upon completion of this module, the students will be able to compute probabilities, expected value, variance and standard deviation for a binomial distribution using statistics tables with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute probabilities, expected value, variance and standard deviation for a Poisson distribution using statistics tables with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio BB Learn Discussion Boards for discussions
Module 4	OBJECTIVE: Upon completion of this module, the students will be able to compute probabilities for a given interval, mean, variance and standard deviation for a Uniform distribution with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute probabilities for a	Computer Browser to access class materials

	given interval for a Normal distribution using Z-table with at least 80% accuracy.	BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to approximate binomial distribution problems using normal distribution for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to list at least one appropriate application of exponential distribution in business fields such as marketing, management, accounting or finance.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to identify what are samples and what are populations for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to point estimate of μ, σ, and p obtained from a simple random sample for a given business scenario with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute probabilities of a given interval using central limit theorem for a given business scenario with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to identify which sampling method is used among stratified random sampling, cluster sampling, systematic sampling, convenience sampling, and judgment sampling for given sampling scenarios in business context with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio BB Learn discussion board

	OBJECTIVE: Upon completion of this module, the students will be able to estimate a population mean from a sample mean when σ is known for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to estimate a population mean from a sample mean when σ is unknown for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine sample size for an interval estimate of a population mean for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
Module 5	OBJECTIVE: Upon completion of this module, the students will be able to determine the null hypothesis and alternative hypothesis for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine the test statistics for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine the rejection regions and non-rejection regions for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine the critical values of hypothesis testing for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office

		WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine the conclusions of population mean hypothesis testing for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine p-value of hypothesis testing for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to define the type I and type II error for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine confidence intervals for population differences when σ1 and σ2 are known or unknown for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to develop the null and alternative hypothesis when conducting hypothesis testing for μ1-μ2 when σ1 and σ2 are known or unknown for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine test statistics using Excel and R when conducting hypothesis testing for μ1-μ2 when σ1 and σ2 are known or unknown for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine p-value using Excel and R when conducting hypothesis testing for μ1-μ2 when σ1 and σ2 are known or unknown for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office

		WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to decide the hypothesis results when testing for $\mu 1-\mu 2$ when $\sigma 1$ and $\sigma 2$ are known or unknown for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to decide the hypothesis results when testing for $\mu 1-\mu 2$ with matched samples for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
Module 6	OBJECTIVE: Upon completion of this module, the students will be able to decide the hypothesis when conducting analysis of variance for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to decide the test statistics using Excel and R when conducting analysis of variance for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to compute the p-value when conducting analysis of variance for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine the hypothesis results when conducting analysis of variance for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio

	OBJECTIVE: Upon completion of this module, the students will be able to determine results of independence tests for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located
		Microsoft Office WebAssign R and RStudio
Module 7	OBJECTIVE: Upon completion of this module, the students will be able to conduct simple linear regression using data analysis in Excel and R for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to determine simple linear regression equation using Excel and R outputs for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to explain coefficients in simple linear regression outputs for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to estimate and predict using simple linear regression equations for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
	OBJECTIVE: Upon completion of this module, the students will be able to conduct multiple linear regression using data analysis in Excel and R for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio Microsoft Excel Data Analysis

	OBJECTIVE: Upon completion of this module, the students will be able to determine multiple linear regression equation using Excel and R outputs for given business scenarios with at least 80% accuracy.	Computer Browser to access class materials BB Learn- where class materials are located Microsoft Office WebAssign R and RStudio
		Microsoft Excel Data Analysis