UNIVERSITY OF MASSACHUSETTS DARTMOUTH
CHARLTON COLLEGE OF BUSINESS
DEPARTMENT OF DECISION AND INFORMATION SCIENCES

1. Course Information :

Course Name: **Business Statistics**
Course ID: **POM 212 -7102**
Prerequisite: **MTH 146 Finite Mathematics & Sophomore standing**
Semester: **Summer 2019**
Mode: **Online**

2. Instructor Information:

Instructor: **Uday Kant Jha**
Office: **Charlton College of Business, Room No. 206**
Email: **ujha@umassd.edu**
Phone: **508-999-8350**
Office Hours: **Monday, Tuesday & Thursday   7:30 PM – 8:30 PM**
  Using Collaborate Ultra with prior appointment

3. Description:

This course examines both descriptive and inferential statistics as applied to business. Topics covered include graphical and tabular methods of data presentation, probability theory, and distributions, hypothesis testing, tests of goodness of fit & independence, & regression. Emphasis is placed on concepts, applications and the proper use of statistics to collect, analyze and interpret data. Throughout this course, the student will use computer software to perform statistical analyses. Students will learn how to make decisions using facts and the techniques of data analysis. Students will also use the Internet to supplement classroom learning. We emphasize the use of technology in solving statistics problems and address global issues of interest. Particular emphasis is placed on ethical issues associated with data analysis, and the impact on business stakeholders, both domestic and international.

4. Course Objectives :

Upon completion of this course, you will be able to perform various statistical techniques and understand their assumptions. You will learn to apply these techniques to various cases:

From this course, you will:

- *Be introduced to statistical thinking and the ethical use of statistical methods*
- *Be able to use Microsoft Excel to conduct statistical analyses*
- *Be able to work with tables and charts for business and industrial data*
- *Understand basic probability and probability distributions*
- *Be able to calculate measures of central tendency and dispersion*
- *Be introduced to the methods of regression & correlation analysis*

- *Understand how to utilize hypothesis-testing techniques to test business assumptions*
- *Be able to apply tests of goodness of fit and independence to data*
- *Be able to apply statistical techniques to real-life applied cases*
- *Understand how to use the regression model for prediction and forecasting in business.*

5. Competencies and Contact Hours:

The student will be introduced to statistical thinking, definitions, techniques of organizing and describing information, Regression Analysis, Correlation Analysis, ethical pitfalls and misuse in the collection & presentation of data, and use of statistical functions in Microsoft Excel for data analysis.

The student will understand:

Competencies		Contact Hours
Variables, types of data, levels of measurement & ethical considerations	3	03
Descriptive Statistics: Tabular and Graphical Displays	4	07
Descriptive Statistics: Measures of location and dispersion	4	11
Discrete distributions: Binomial, Poisson & Hypergeometric	3	14
Continuous probability distributions: Uniform, Normal & Exponential	4	18
Sampling and Sampling Distributions of the mean and proportion	3	21
Confidence interval estimation for large & small samples; t-distribution	4	25
Hypothesis Testing for means and proportions for single populations	4	29
Two population hypothesis tests: differences between two samples	4	33
Tests of goodness of fit and independence	2	35
Estimation and prediction using simple linear regression	4	39

6. Required Course Material:

Text: Statistics for Business and Economics Thirteenth Edition
Author: David Anderson, Dennis Sweeny, Thomas Williams, Jeffrey Camm,
              James Cochran)
Publisher-Thomson; ISBN: 978-1-305-58531-7
Software: Microsoft Excel
myCourses: Course material for the class can be accessed from this website.

7. Class Policy:

Quiz: You are required to complete the online quizzes available on myCourses before the corresponding test. You can attempt the quizzes twice and the higher of the two score will be counted towards your final grade. These quizzes will not be available after the test of that module.

Late assignments: You must submit the Homework assignments on the course website in pdf or word format on the day of the corresponding test. This being an online class, it is extremely critical to complete your work as per the schedule. To

encourage on-time submissions and avoid falling behind, assignments that are submitted after the due date will lose 50% points.

Feedback: Assignments submitted on time will be graded before the due date for next assignment and appropriate feedback will be provided.

Changes: The class schedule towards the end of this syllabus is tentative, and is subject to change at the instructor's discretion.

8. Resources for UMass Dartmouth Students:

UMass Dartmouth has several ways for you to get technical support for myCourses.
Self-Service Knowledge Base
On-Campus myCourses Student Help Line
Monday – Friday 8:00 AM – 5:00 PM
508-999-8505
myCoursesHelp@UmassD.edu

Off-Hours and Holiday Help
Open 24hrs
888-989-7074
umd.echelp.org

Tutoring
If you have difficulty with the coursework, please:
- Contact me directly using the contact information listed at the top of this document.
- Contact the Academic Resource Center (ARC) for support:
  - Location: Liberal Arts Room 007
  - Phone: 508.999.8708

Technical Help

- 24/7 email, live chat, and phone support for myCourses is available at the myCourses support portal.

- Support information for all other UMass Dartmouth technologies can be found on the Technical Resources page.

You can access all the students' resources at UMassD**.**

9. Communication Plan:

Expectations for Electronic Communication

- Please include POM 212 in the subject area, while communicating via email **(email ID:** ujha@umassd.edu**).** You can expect a reply from me via email within 24 hours.

Time Considerations

In our online course environment, students should spend a minimum of 3 hours a week on your own, working on the concepts that you would usually get in a traditional "live" lecture. Spend an additional 3–6 hours on reading and on course assignments. Please use tips to manage your time.

10. University Policies:

Incomplete Policy

According to the university catalog, an incomplete may be given only in exceptional circumstances at the instructor's discretion. The student must be passing at the time of the request or be sufficiently close to passing. If the work is not completed within one year of the recording of the incomplete grade, the grade will become an F(I). The incomplete policy for this course is that at least 70% of the course must be already completed and an exceptional circumstance (i.e. medical issue) must exist. If you feel you require an incomplete for an exceptional reason, you need to email me and state your reasons for the incomplete in writing. We will then decide on a course of action.

Course Conduct

UMass Dartmouth policies regarding equal opportunity, discrimination, harassment, and sexual violence apply to all learning environments wherever they are located and from wherever they are taught. This applies to all UE face-to-face, off-campus, blended, and online courses. Please see the Office of Diversity, Equity & Inclusion policies page for more information.

Student Academic Integrity Policy

- All UMass Dartmouth students are expected to maintain high standards of academic integrity and scholarly practice. The University does not tolerate academic dishonesty of any variety, whether as a result of a failure to understand required an academic and scholarly procedure or as an act of intentional dishonesty.
- A student found responsible for academic dishonesty is subject to severe disciplinary action, which may include dismissal from the University. The procedure for responding to incidents of academic dishonesty may be found in Section III of this document. You may also refer to the Student Handbook for information about the judicial process.
- Students must assume responsibility for maintaining honesty in all work submitted for credit and in any other work designated by the instructor of the course. Students are also expected to report incidents of academic dishonesty to the instructor or dean of the instructional unit.
- The intent of this policy is to make clear the standards of academic integrity at UMass Dartmouth.
  *For additional information on violations, infractions, and consequences visit the UMass Dartmouth Student Academic Integrity Policy.

Center for Access and Success

In accordance with University policy, if you have a documented disability and require accommodations to obtain equal access in this course, please meet with the instructor at the beginning of the semester and provide the appropriate paperwork from the Center for Access and Success. The necessary paperwork is obtained when you bring proper documentation to the Center.

11. Grading Policy:

The course grade will be determined by the total of the scores received from the following:

Evaluation Type	Score
Tests (four)	40%
Online quizzes (Eleven)	25%
Homework assignments (Four)	25%
Teach-A-Topic	10% (No partial credit)
Total	100%

Final grades would be determined based on all items shown above with weight as indicated. The course contents are designed to help you to achieve success in your current or future profession. Therefore, to pass this course, a student must develop and demonstrate a basic understanding of the concepts, and good comfort level in interpretation and application. Given below are the grades based on the final course score:

Letter Grades	Percentage	Letter Grades	Percentage
A+	>=97	C+	77.0-79.9
A	93.5-96.9	C	73.5-76.9
A-	90.0-93.4	C-	70.0-73.4
B+	87.0-89.9	D+	67.0-69.9
B	83.5-86.9	D	63.5-66.9
B-	80.0-83.4	D-	60.0-63.4
		F	< 59.9

12. Class Schedule:

Module-1

Chapter-1 Data and Statistics: 1.1-1.6

Data & data sources, Misuse of data, ethics in statistical analysis & reporting Scales of measurement, Cross-sectional & time series data, Descriptive & Inferential statistics, Exercises and homework involving global companies

Chapter-2 Tabular & Graphical Presentations: 2.1-2.4

Frequency distribution, bar graph, pie chart, histogram, cumulative distribution Scatter plot with examples of global warming and global stock markets, cross tabulation, PivotTable in Microsoft Excel with a homework assignment.

Chapter-3 Descriptive Statistics: Numerical Measures: 3.1-3.4

Mean, median, mode, percentiles, range, standard deviation, the coefficient of variation, z-scores, the empirical rule, 5-number summary, box plots, Use of statistical functions in Microsoft Excel.

TEST – 1   June 28, 2019
The due date for Homework 1 June 28, 2019

Module-2

Chapter-5 Discrete Probability Distributions: 5.1-5.6

Expected value & variance, Binomial experiments, Binomial, Poisson and Hypergeometric distributions. Using statistical functions in Microsoft Excel, Exercises, and homework involving global companies.

Chapter-6 Continuous Probability Distributions: 6.1-6.4

Uniform distributions, The Normal curve, Standard normal distribution, Normal approximation of Binomial probabilities, Calculations using standard normal table Exponential probability distribution. Using statistical functions in Microsoft Excel to calculate probabilities for continuous distributions.

TEST – 2   July 10, 2019
The due date for Homework 2 July 10, 2019

Module-3

Chapter-7 Sampling and Sampling Distributions: 7.1-7.8

Sampling distribution of means & proportions, Standard error of the mean. Central limit theorem, Finite & infinite populations, Random sampling using Microsoft Excel

Chapter-8 Interval Estimation: 8.1-8.4

Sampling error, Large and small sample cases, Means & proportions,
"σ" estimated by "s", the 't' distribution, Determination of required sample size, Interval estimation using Microsoft Excel

Chapter-9 Hypothesis Testing: 9.1-9.6

Null & alternative hypotheses, Type I & Type II errors
Population Mean, one and two-tailed tests, large & small sample cases, Population proportion tests, Hypothesis testing with Microsoft Excel

TEST – 3   July 24, 2019
The due date for Homework 3 July 24, 2019

Module-4

Chapter-10 Difference Between Means of Two Populations: 10.1, 10.2, & 10.4

Inferences about the difference between means, σ values known & unknown
Hypothesis testing about μ_1-μ_2, σ known and unknown, Inferences about the differences between two population proportions with Microsoft Excel

Chapter-12 Tests of Goodness of Fit and Independence: 12.1 & 12.2

Multinomial populations,
The χ-squared distribution, Contingency tables,
Tests of Goodness of fit and independence using Excel

Chapter-14 Simple Linear Regression: 14.1-14.3

The simple linear regression model, Estimated regression equation, Least squares method, Sample correlation coefficient, R-square, Regression with Microsoft Excel and interpretation of regression equation

TEST – 4   August 06, 2019
The due date for Homework 4 August 06, 2019