



## UNIVERSITY OF LA VERNE

### Course Syllabus

#### **BUS500 - ONLINE**

Quantitative and Statistical Analysis (3 units)

Summer, 2018 CRN: 1274

Online

Class location: Online

Instructor: Joel Greenman

Office Location: Online Email

Office Hours: Email Questions only

Email: [jgreenman@laverne.edu](mailto:jgreenman@laverne.edu)

Course Session: 6/11/18 – 8/19/18 – 10 Weeks

The contents of this course syllabus are subject to change as the course progresses, as per the discretion of the course instructor. Students are responsible for any and all changes.

#### **Course Textbook**

**Lind, Marchal, Wathen: Basic Statistics for Business & Economics, 9e**

**McGraw-Hill**

**ISBN: 9781260299274**

#### **Course Catalog Description**

“Examines the application of selected topics from descriptive and inferential statistics to managerial decision-making. Includes regression analysis and model building, optimization and rates of change, and elements of financial mathematics.”

**PREREQUISITE:** Basic knowledge and access to a computer spreadsheet such as Excel would be appropriate. Prior knowledge of statistics is not required.

***While this syllabus will serve as a general guideline for this course, the instructor reserves the right to make any changes to its contents, such as exam dates, or its requirements as deemed necessary. Revisions to this Course Syllabus may be posted as the term progresses.***

#### **Course Description**

This is an introductory course in the modern methods of data analysis. This course will provide students majoring in economics, business administration, management, accounting, finance, and other business-related fields with an overview of descriptive and inferential statistics. Topics covered include descriptive statistics, probability theory, binomial and normal distributions, estimations, hypothesis testing, and regression analysis.

***This online course will contain weekly HW assignments, Discussion Board assignments and 4 online exams. The purpose of the discussion board assignments is to allow you to enhance your understanding of the topics covered in this course through practical applications.***

## Class Sessions:

Week 1: 6/11/18 – 6/17/18

Week 6: 7/16/18 – 7/22/18

Week 2: 6/18/18 – 6/24/18

Week 7: 7/23/18 – 7/29/18

Week 3: 6/25/18 – 7/1/18

Week 8: 7/30/18 – 8/5/18

Week 4: 7/2/18 – 7/8/18

Week 9: 8/6/18 – 8/12/18

Week 5: 7/9/18 – 7/15/18

Week 10: 8/13/18 – 8/19/18

## EXAMS

- *There will be 4 exams in this course, including the final exam.*
- *The exams are scheduled during the weeks as defined below.*
- *Each exam will be available to students at the start of week(s) 3,5,7,10.*
- *The exam availability will close at the end of each week as defined in the exam schedule below.*
- *It is the student's responsibility to complete each online exam during the week that the exam is availability. There will be no make-up exams in this course if a students does not take the online exam during the scheduled week.*
- *Each online exam can be accessed using the Exam tabs(i.e.- Exam I), on the left side of the course homepage.*

### ➤ **Week 3 – 6/25/18 – 7/1/18 Examination I(Chapts. 1 – 4)**

- Intro to Statistics.
- Describing Data: Frequency Tables, Frequency Distributions and Graphical Presentations.
- Describing Data: Numerical Measures.
- Displaying and Exploring Data.

### ➤ **Week 5 – 7/9/18 – 7/15/18 Examination II(Chapts. 5, 8)**

- Probability Concepts and Applications.
- Data Collection & Sampling.

### ➤ **Week 7 – 7/23/18 – 7/29/18 Exam III(Chapts. 6, 7)**

- Discrete Probability Distributions and Random Variables.
- Continuous Probability Distributions.

➤ **Week 10: 8/13/18 – 8/19/18 - Final Review: Final Examination.**  
**Chpts. 10, 13, 18.**

- One Sample Tests of Hypotheses.
- Correlation and Linear Regression.
- Time Series Analysis.
- Statistical Process and Quality Control Management.

***Textbook Chapter Coverage: (16 Chapters)***

**Chapter 1: What is Statistics?**

**Chapter 2: Describing Data: Frequency Tables, Frequency Distributions and Graphical Presentations.**

**Chapter 3: Describing Data: Numerical Measures.**

**Chapter 4: Describing Data: Displaying & Exploring Data.**

**Chapter 5: A Survey of Probability Concepts.**

**Chapter 6: Random Variables - Discrete Probability Distributions.**

**Chapter 7: Continuous Probability Distributions.**

**Chapter 8: Sampling Methods & the Central Limit Theorem. (Instructor Discretion).**

**Chapter 9: Estimation & Confidence Intervals.**

**Chapter 10: One-Sample Tests of Hypotheses.**

**Chapter 12: Analysis of Variance.**

**Chapter 13: Correlation and Linear Regression.(Forecasting Methods I).**

**Chapter 14: Multiple Linear Regression.**

**Chapter 15: Nonparametric Methods(Optional).**

**Chapter 18. Time Series Analysis and Forecasting**

**Chapter 19: Statistical Process Control and Quality Assurance.**



The following are the pages/sections in your course textbook that you will be responsible for in relation to the assignments in this course as well as the exams and discussion boards, including instructor posted documents in the course content area:

Chapt. 1 – pgs. 1 – 18

Chapt. 2 – pgs. 19 – 52.

Chapt 3 – pgs. 53 – 87.

Chapt. 4 – pgs. 88 – 96.

Chapt. 5 – pgs. 117 – 146.

Chapt 6 – pgs. 155 – 162, 164 – 169.

Chapt. 7 – pgs. 184 – 188, 189 – 203.

Chapt. 8 – pgs. 210 – 217.

Chapt. 10 – pgs. 275 – 289.

Chapt. 13 – 365 – 376, 380 – 385.

Chapt. 18 – (in Learning Resource Documents) – pgs. 653 – 672(Learning Resource Documents)

Chapter 19 – Statistical Process Control.



### ***Proposed Schedule of Primary Topics to be covered & Course Overview:***

The following is the proposed topic coverage schedule for this course. The course instructor reserves the right to revise or update this schedule as per the instructor's discretion. Students will be advised of any schedule revisions.

**NOTE: Unless otherwise notified by the course instructor, follow the weekly assignment listing and exam schedule and exams topics coverage, as defined in the assignment listing presented in this course syllabus.**

#### **1. Week 1 - Introduction to Statistics: (Chapts. 1 – 2)**

- **Chapter 1: What is Statistics? – pgs. 1 – 18.**
- **Chapter 2: Describing Data: Frequency Tables, Frequency Distributions and graphical Presentations. – pgs. 19 – 52.**
  - Instructor welcome to the course.
  - Course syllabus: Distribution and discussion.
  - Use of the online learning platform using **Blackboard**.
  - Discussion of accessing the publisher's website/data files for assigned chapter problems.
  - Information on the use of MS Excel in this course and the loading and use of the MS **Excel** statistical toolpak for MS Office.

#### **2. Week 2 - Descriptive Techniques: Measures of Central location/dispersion. (Chapt. 3 – 4).**

- **Chapter 3: Describing Data: Numerical Measures. Pgs. 53 – 87.**
- **Chapter 4: Displaying and Exploring Data – Pgs. 88 – 96.**

#### **3. Week 3**

- **Data Collection & Sampling: (Chapt. 8) – pgs. 210 – 219.**
  - **Overview of Sampling Methods**
  - **Examination I(Chapts. 1 – 4)**

4. **Week 4 – Probability Concepts & Applications: (Chapt. 5) - Pgs. 117 – 146.**  
Analysis of Variance.
  
5. **Week 5 – Discrete Probability Distributions & Random Variables - (Chapt. 6).**
  - Discrete Probability Distributions/Random Variables – pgs. 155 – 162.
  - Binomial Probability Distribution – pgs. 164 – 169.
  - **Examination II(Chapts. 5, 8)**
  
6. **Week 6 - Continuous Probability Distributions: (Chapt. 7).**
  - Continuous Probability Distributions – pgs. 184 – 188.
  - Normal Probability Distribution – pgs. 189 – 203.
  
7. **Week 7 – One Sample Tests of Hypotheses - Chapt. 10) – pgs. 275 – 289.**
  - *What is Hypothesis Testing?*
  - *Structure of Hypothesis Tests.*
  - *Statistical Analysis and Testing Procedures.*
  - **Exam III(Chapts. 6, 7)**
  
8. **Week 8 – Correlation and Linear Regression: (Chapt. 13).**
  - Correlation Analysis – pgs. 365 – 376.
  - Simple Linear Regression Analysis – pgs. 380 – 385.
  
9. **Week 9 – Time Series & Forecasting - (Chapt. 18) – (In Week 8 learning Resource Documents – pgs. 653 – 672.**  
**Statistical Process Control**
  
10. **Week 10 – Final Examination**

### **Why Study Statistics**

The field of statistics provides the practitioner with some of the most useful techniques for evaluating ideas, testing theory, and discovering the truth.



*Statistics ... the most important science in the whole world: for upon it depends the practical application of every other science and of every art; the one science essential to all political and social administration, all education, all organization based upon experience, for it only gives the results of our experience.- Florence Nightingale*

Statistical Thinking will one day be as necessary for efficient citizenship as the ability to read and write.- **H.G. Wells**

From medical studies to research experiments, from satellites continuously orbiting the globe to ubiquitous social network sites like Facebook or MySpace, from polling organizations to United Nations observers, data are being collected everywhere and all the time. Knowledge in statistics provides you with the necessary tools and conceptual foundations in quantitative reasoning to extract information intelligently from this sea of data.

### ***Who needs statistics in the 21st century?***

Anyone who wants to be able to look critically at numerical information and not be misled. Anyone who has problems to solve, problems they won't be able to solve until they find out a little more about the world and how it operates. Such problems include finding ways to make a business more profitable right through to improving living standards and fighting cancer. Investigative questioning, designing ways to collect data to answer those questions, collecting data, and making sense of what that data says to produce reliable answers - this is the subject matter of statistics.

Computers allow us to collect and store information in quantities that previously would not even have been dreamed of. What is this information? It might be costs, values, sales volumes, measurements, ratings, distances, prices, percentages, counts, times, or market shares. But raw, undigested data stored on computer disks is of no use until we can start to make sense of it.

Statistics is the human side of the computer revolution, an information science, the science (and art!) of extracting meaning from seemingly incomprehensible data. In your future life and career, you will need to be able to make good use of such information to make sound decisions.

A practicing statistician may help to design an experiment to evaluate the effects of a new treatment for a disease, analyze a set of data gathered by an ecologist, and help a freight carrier to study work processes to find ways of making the company more profitable.



## ***Course Goals, Objectives, and Outcomes***

This is a learning-by-doing course. This means that you will learn the material through online course lectures/presentations, homework, weekly discussion forum activities, and group activities. After completing this course, students will learn and apply a tremendous amount of statistical concepts and tools to business-related problems and decision-making that affects our daily lives.

### **Key learning objectives of this course are to:**

1. Know the differences between descriptive and inferential statistics
2. Compute and explain the mean, variance and the standard deviation
3. Calculate probabilities and identify the characteristics of a probability distribution/Counting Methods.
4. Develop a knowledge and understanding of discrete probability distributions/binomial distribution.
5. Understand normal and standard normal distributions
6. Understand why a sample is a practical way to learn about a population
7. Know the central limit theorem and its application to finding probabilities
8. Define a hypothesis, test statistic, and p-value
9. Distinguish between one-tail and two-tailed test of hypothesis
10. Apply regression analysis to estimate and interpret the linear relationship between variables.
11. Understand the concepts and techniques related to the Time Series Analysis & Forecasting.

### ***Course Requirements***

The requirements for this course include two examinations and a final exam.

Grading weights are as follows:

Three (3) Examinations:	45% (15% each exam)
Weekly Discussion Board Assignments:	15%
Homework:	15%
Final Examination:	25%

Examinations will be multiple choice/true-false type questions that may include analyses of graphs and computing values and numbers, in addition to the concepts and terms. All exams are will be administered online through Blackboard. Be aware that there are posted dates when exams will be available to students. If you miss the closing date of an online exam, there will be no make-up exam.

An “F” grade may also be given in this course in cases of cheating or plagiarism relating to assignment submissions.

The tentative final course grade scale will be:

Grade	A	A-	B+	B	B-	C+	C	F
Percentage Range	94-100	90-93	87-89	84-86	80-83	77-79	74-76	0-73

- A Outstanding—superior knowledge and skill.
- B Above average—more than adequate knowledge and skill.
- C Average—basic knowledge and skill.
- F Failed—confusion, inability to recall knowledge and/or perform skills, or absence of knowledge and inability to perform skills.

Students are expected to take exams during the assigned week. If a student misses an exam and has authorized document, then special arrangements can be made to make up the missed exam. However, **there will be no make up for missing examinations and the final examination.**

### **Drop Policy**

If you decide to drop this course, YOU must take all required steps as outlined by the Registrar in time period drops are permitted. It is your responsibility to drop the course on time to avoid getting an “F”. Please DO NOT simply stop attending classes and expect to be automatically dropped by the instructor or the Registrar.

### **Expectations of “Classroom” Behavior(Both Online & Onground Courses):**

In an online class, the online platform is your “classroom”. Disruptive behavior, which also can happen in an online class, which is persistent or significantly interferes with online classroom activities may be subject to disciplinary action. As a University of La Verne student, you are pledged to join the discourse of the academy with honesty of voice and integrity of scholarship and to show respect for staff, professors, and other students. See the University’s Academic Rights and Responsibilities (<http://sites.laverne.edu/academic-advising/academic-rights-and-responsibilities/>).

### **Email Communication**

I will frequently communicate with the entire class using campus email systems, so it is essential that you regularly check your laverne.edu email address or forward your La Verne account email to your preferred email address.



## Homework

### *No late homework accepted.*

Students are encouraged to discuss and work together on homework, but each individual student must submit his/her own homework. It is important that students dedicate adequate hours every week to practice, complete homework, and prepare for exams.

## Final Examination

The final exam covers chapters: TBA.

## Attendance and Participation

Attendance/participation of each student will be monitored by the instructor each week. Participation in this online course relates to online assignment submissions on a weekly basis and weekly participation in the discussion forums. In order to learn the course material and earn a good grade, students must actively engage the course materials, participating in all online learning activities, and asking questions to the instructor and other students in class. Thus, regular “attendance” in this online course and participation are integral to performing well in this course. Students are required to read assigned chapters, articles, review weekly posted powerpoint presentations and submit timely homework assignments using the Blackboard platform. Weekly topics covered and learning resources associated with these topics are defined in this course syllabus. Students are responsible for material covered or changes in assignments as advised by the course instructor.

## Academic Integrity

Students must adhere to University of La Verne’s Academic Honesty (<http://sites.laverne.edu/academic-advising/files/2010/11/Section31.pdf>). University of La Verne is a community dedicated to academic excellence. Dishonesty such as cheating, facilitating cheating, plagiarism, falsification of data, but not limited to, will be enforced in this course. Students are expected to report cases of academic dishonesty to the course instructor.

## Incomplete Policy

Incompletes will be given in rare and exceptional instances, as determined by the instructor. If you foresee problems in finishing course materials – e.g., examinations and homework – please see the instructor *immediately or as soon as possible* to discuss grading options.

**Any incomplete request MUST be communicated to the course instructor 1 week**

**prior to the course closing date, or it will not be considered.**

### **Disability Statement**

Any student who feels he or she needs accommodation, based on the impact of a disability, should contact me privately to discuss your specific needs. Please contact the Services for Students with Disabilities Department (<http://sites.laverne.edu/students-with-disabilities/>) at (909) 593-3511, ext. 4441 and/or visit the department to coordinate reasonable accommodations for students with documented disabilities. They are located at 2147 "E" Street, La Verne, CA 91750.

### ***Technology Use in this course:***

**In this course, the instructor will make reference to through in-class presentations and homework assignments and textbook references, the use of both scientific/business/graphical calculators and MS Excel. Students will be expected to gain competency with the usage of both calculators and MS Excel as a tool in doing the statistical analysis as presented in each topic of this course. Students are expected to have a working version of MS Office 2010 on their computer or other accessible computer, in order to use the Excel spreadsheet, data analysis tools in Excel and the graphical features of Excel.**



### ***Use of Scantron Forms:***

**There are no scantrons forms used in this online course for purposes of test taking. All exams are online and automatically graded upon completion.**

### ***Course Presentation Mediums:***

Access to this online course will be solely through the use of **Blackboard**. Each online student **MUST** have access to Blackboard on a continuous basis along with the necessary logon ID and password. If you have any issues accessing Blackboard, please contact the University of LaVerne Blackboard tech support at: **909-448-4089**

Blackboard will be used by the course instructor to post all learning materials such as class handouts and weekly presentations relating to specific topics covered in this course. Blackboard will also be used as the online gradebook and for interactive discussion forum posts.

### ***Reading Assignments, Homework Assignments and Test Dates***

***Be sure to include a cover page on ALL homework assignments submitted in this course. The cover page must include the following:***

- ❖ **Course Name.**
- ❖ **Your Name.**
- ❖ **Week number.**
- ❖ **Homework assignment chapters and assigned problems.**

### ***Access to Data Sets in the Course textbook: (FILE)***

When you go to the following website:

[http://highered.mheducation.com/sites/1260187500/student\\_view0/index.html](http://highered.mheducation.com/sites/1260187500/student_view0/index.html) you will not be prompted to enter any login credentials.

Here is the link to access the student resources for the text, where the chapter data files are located: [http://highered.mheducation.com/sites/1260187500/student\\_view0/index.html](http://highered.mheducation.com/sites/1260187500/student_view0/index.html). Here are the instructions for students to access the data files:

Go to: [http://highered.mheducation.com/sites/1260187500/student\\_view0/index.html](http://highered.mheducation.com/sites/1260187500/student_view0/index.html) and click on “Additional Student Resources”

Basic Statistics for Business and Economics, 9/e

Douglas A. Lind, Coastal Carolina University  
William G. Marchal, University of Toledo  
Samuel A. Wathen, Coastal Carolina University

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Next click on the link that says “Additional Student Resources”

Additional Student Resources

(See related pages)

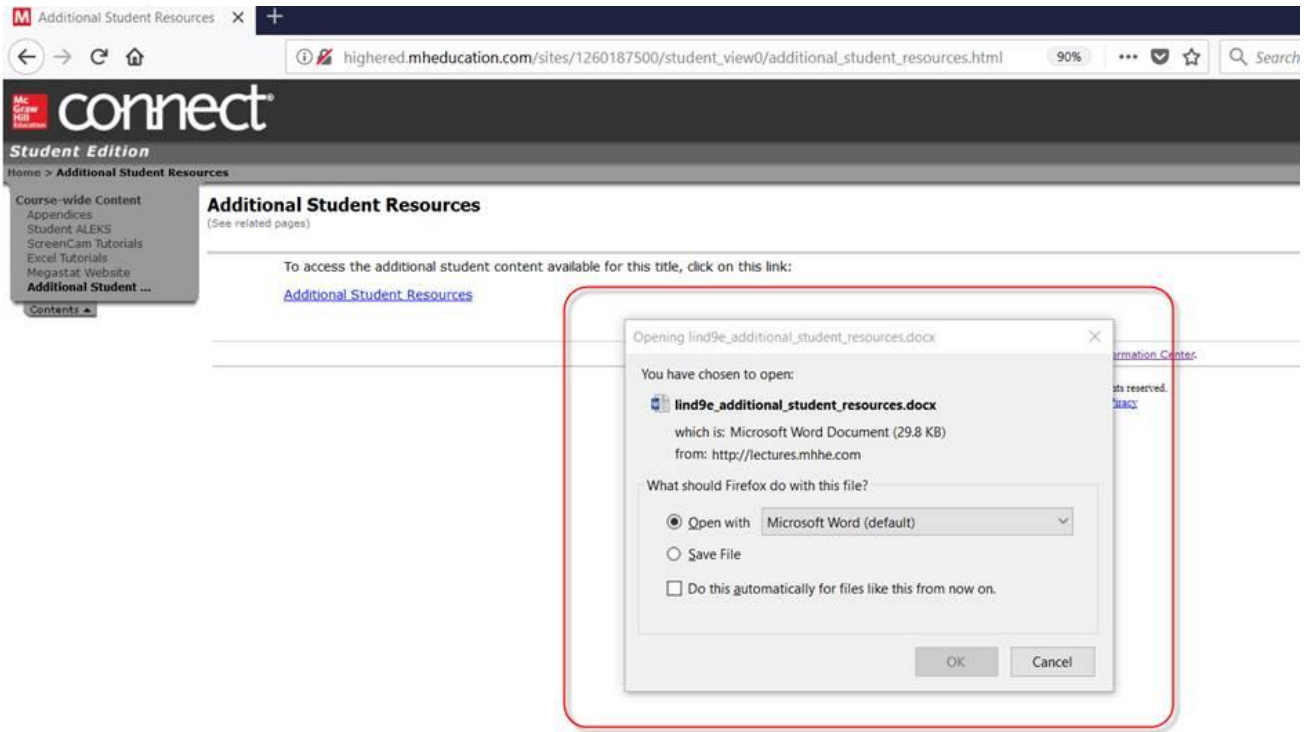
To access the additional student content available for this title, click on this link:

[Additional Student Resources](#)

To learn more about the book this website supports, please visit its [Information Center](#).

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This will prompt the student to open a MS Word file or save the file to their computer:



This will open up a document with zip files that contain each chapter's data files:

# *Basic Statistics for Business and Economics, 9<sup>th</sup> Edition*

By Lind

## ADDITIONAL STUDENT RESOURCES

Please click the links below to access Additional Student Resources for this title.

NOTE: You may need to hold your CTRL key down while clicking on a link.

### Data File Spreadsheets

Title	List of Files	Zip File
Chapter 01 – What is Statistics?	Chapter 1 Problem 17	<a href="#">Chapter 01 Data Files</a>
Chapter 02 – Describing Data: Frequency Tables, Frequency Distributions, and Graphic Presentation	Chapter 2 Problem 11 Chapter 2 Problem 12 Chapter 2 Problem 13 Chapter 2 Problem 14 Chapter 2 Problem 26 Chapter 2 Problem 29 Chapter 2 Problem 20	<a href="#">Chapter 02 Data Files</a>

**If a student runs into any issue with accessing the data files, please contact the McGraw Hill Customer Experience Group (tech support) at 800.331.5094 and a tech agent will assist them.**

### *Loading the Data Analysis ToolPak in MS Excel 2016:*

The Analysis ToolPak is a Microsoft Office Excel add-in program that is available when you install Microsoft Office or Excel. You will be using this data analysis toolpak in this course.

To use the Analysis ToolPak in Excel, however, you need to load it first.

1. Click the **Microsoft Office Button**, and then click **Excel Options**.
2. Click **Add-Ins**, and then in the **Manage** box, select **Excel Add-ins**.
3. Click **Go**.
4. In the **Add-Ins available** box, select the **Analysis ToolPak** check box, and then click **OK**.
  1. **Tip** If **Analysis ToolPak** is not listed in the **Add-Ins available** box, click **Browse** to locate it.
  2. If you get prompted that the Analysis ToolPak is not currently installed on your computer, click **Yes** to install it.
5. After you load the Analysis ToolPak, the **Data Analysis** command is available in the **Analysis** group on the **Data** tab.

**Assignment Listing:**

**Weekly assignments are due on the last day of each week(Sunday at 11:59:59 PST.**

**All homework assignments in this course will be submitted through Blackboard using the provided weekly assignment link found in the “Content” area of the Blackboard course.**

**Assignment Listing:**

**Lind, Marchal, Wathen: Basic Statistics for Business & Economics, 9e  
McGraw-Hill  
ISBN: 9781260299274**

<b>Week Number</b>	<b>Week Start Date</b>	<b>Due Date</b>	<b>Assignment</b>
<b>1</b>	<b>6/11/18</b>	<b>6/17/18</b>	Read chaps. 1 – 2: Course Textbook. Pgs. 1 – 52. What is Statistics: Chapt 1. Describing Data: Chapt. 2.  <b>Intro Discussion Forum &amp; Week 1 Discussion Forum</b>  <b>Homework Assignment:</b> Chapt. 1 – pg. 11: 1, 3, 5, pg. 14- 15. – 5, 7, 9, 17, Practice test, pg. 17. Chapt. 2 – pg. 32: 11, pg. 33: 13, pg. 51 – 2: Practice Test

2	6/18/18	6/24/18	<p>Read chapt. 3 &amp; 4 Course Textbook – Numerical Descriptive Techniques. Pgs. 53 - 96.</p> <p>If you use the Data Analysis Toolpak to display a Summary Report for the data in the following problems, present the summary report in your submitted assignment and explain what the summary report references in relation to solutions to the given problem.</p> <p>Homework Assignment: Pg 86 – 87: Practice test</p>
3	6/25/18	7/1/18	<p><b>Examination I(Chapts. 1 – 4)</b></p> <p>Read chapt. 8: Course Textbook – Data Collection &amp; Sampling. Pgs. 210 - 219.</p> <p>Homework Assignment:</p> <p>Chapter Exercises:</p> <p><b>Pg. 236/19, 217 – 218/1,3</b></p>
4	7/2/18	7/8/18	<p>Read chapt. 5: Course Textbook – Probability: Pgs. 117 - 146.</p> <p>Homework Assignment: Pg. 154: Practice Test.</p>
5	7/9/18	7/15/18	<p><b>EXAM II – Chapts. 5, 8</b></p> <p>Read chapt. 6: Course Textbook – Pgs. 155 – 169.</p> <p>HW: Pg. 183/ Practice Test</p>
6	7/16/18	7/22/18	<p>Read chapt. 7: Course Textbook – Pgs. 184 – 203</p> <p>Homework Assignment: Pg. 209/Practice test.</p>



<b>7</b>	<b>7/23/18</b>	<b>7/29/18</b>	<p><b><u>Exam III(Chapts. 6, 7)</u></b></p> <p>Read chapt. 10: Course Textbook – Pgs. 275 - 289.</p> <p>Homework Assignment:</p> <p>Pg. 303 – 4/ Practice test.</p>
<b>8</b>	<b>7/30/18</b>	<b>8/5/18</b>	<p>Read chapt. 13: Course Textbook – Pgs. 365 - 385.</p> <p>Homework Assignment:</p> <p>Pr. 416 – 417/practice Test(1 – 10), pg. 386/13, 15</p>
<b>9</b>	<b>8/6/18</b>	<b>8/12/18</b>	<p>Homework Assignment:</p> <p>Chapt. 18: pg. In week 9 learning resource documents)</p> <p>Com,plete Instructor Problem #1, pg 664, Instructor Problem #2, pg. 665, Instructor Problem #3(1 – 13).</p>
<b>10</b>	<b>8/13/18</b>	<b>8/19/18</b>	Final Review: Final Examination. Chapts. 10, 13, 18.

I took the time to develop a listing of online videos that you may want to review in relation to several of the topics that will be discussed in this course.

## *Videos for the Chapters*

### **A. DESCRIPTIVE STATISTICS & DATA COLLECTION**

#### **Ch.1 What is statistics**

What is statistics (simplify statistics):

<http://www.youtube.com/watch?v=ooOdP1BJxLg>

#### ***Type of data – 4 level of measurement:***

<http://www.youtube.com/watch?v=hZxznfnt5v8>

How to install Data Analysis add-ins in MS Excel:

<http://www.youtube.com/watch?v=-ubtpQJ1sml>

How to build a PivotTable in Excel:

<http://www.youtube.com/watch?v=7zHLnUCtfUk>

#### ***Sampling Methods (Partially)***

Type of sampling methods: <http://www.youtube.com/watch?v=be9e-Q-jC-0>

Simple Random Sampling using RAND() in Excel:

<http://www.youtube.com/watch?v=SoK9kq-0uXg>

Parameter, statistic, and Sampling error:

<http://www.youtube.com/watch?v=6O98qw7S8xA>

#### ***Describing Data: Frequency***

Bar graph (Excel): <http://www.youtube.com/watch?v=xIWQRtUpuXo>

Pie chart (Excel): <http://www.youtube.com/watch?v=IVIXbH4nczl>

Histogram and cumulative frequency (Excel):

<http://www.youtube.com/watch?v=x8ePdM9LquM>

Histogram (with bins and grouping) and cumulative frequency (Excel):

<http://www.youtube.com/watch?v=RyxPp22x9PU>

### ***Ch.3 Describing Data: Numerical Measures***

Descriptive statistics v. inferential statistics:

<http://www.youtube.com/watch?v=oHGr0M3TlcA>

Descriptive statistics in MS Excel:

[http://www.youtube.com/watch?v=oHCd2Kq\\_HIY](http://www.youtube.com/watch?v=oHCd2Kq_HIY)

Khan Academy Descriptive statistics

Central tendency: <http://www.youtube.com/watch?v=81zciULLh58>

Standard deviation and variance (hand):

<http://www.youtube.com/watch?v=AjND5AkSeAI>

Mean, Stand deviation and variance (MS Excel):

[www.youtube.com/watch?v=efdRmGgCYBk](http://www.youtube.com/watch?v=efdRmGgCYBk)

### ***Displaying and Exploring Data***

Dot plot: <http://www.youtube.com/watch?v=N7HHmTpccZI>

Stem and leaf: <http://www.youtube.com/watch?v=oEY8u-4T-yQ>

Percentile and quartile (simple explanation):

<http://www.youtube.com/watch?v=Snf6Wpn-L4c>

### ***Probability:***

<https://www.youtube.com/watch?v=-8eSOmTPUbk>

<https://www.youtube.com/watch?v=uzkc-qNVoOk>

[https://www.youtube.com/watch?v=AY3O\\_qsSnbE](https://www.youtube.com/watch?v=AY3O_qsSnbE)

<https://www.youtube.com/watch?v=xgoQeRyvW5I>

<https://www.youtube.com/watch?v=xLK0MWRwFYc>

### ***Data Sampling/Collection Methods:***

<https://www.youtube.com/watch?v=be9e-Q-jC-0>

<https://www.youtube.com/watch?v=ajyeWYoZFX4>

[https://www.youtube.com/watch?v=2m0PrIvLP\\_Y](https://www.youtube.com/watch?v=2m0PrIvLP_Y)

### ***Discrete Random Variables***

<https://www.youtube.com/watch?v=0P5WRKihQ4E>

### ***Continuous Probability Distributions***

[https://www.youtube.com/watch?v=OWSOhpS00\\_s](https://www.youtube.com/watch?v=OWSOhpS00_s)

[https://www.youtube.com/watch?v=K5gwAzEU8\\_w](https://www.youtube.com/watch?v=K5gwAzEU8_w)

### ***Hypothesis Testing***

<https://www.youtube.com/watch?v=VK-rnA3-41c>

<https://www.youtube.com/watch?v=rWFDXt-MINs>

<https://www.youtube.com/watch?v=cpL38ZeIecE>

### ***Simple Linear Regression***

<https://www.youtube.com/watch?v=KsVBbJRb9TE>

<https://www.youtube.com/watch?v=zPG4NjlkCjc>

### ***Time Series Analysis:***

[https://www.youtube.com/watch?v=GUq\\_tO2BjaU](https://www.youtube.com/watch?v=GUq_tO2BjaU)

<https://www.youtube.com/watch?v=F3Kjdz4K7vE>

### ***Statistical Process Control***

<https://www.youtube.com/watch?v=0GfBSuwhUwI>

<https://www.youtube.com/watch?v=UM4wxyc1Tzw>