

**Texas A&M University – Commerce, College of Business**  
**BA 302: Business and Eco Statistics: Summer II, 2015: 7/13/2015-8/13/2015**

Professor: Dr. Kishor Kumar Guru-Gharana  
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Office Hrs: Virtual Office Hours (24/7 for the whole semester)  
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**Required Text:**

D. A. Lind/W. G. Marchal/S. A. Wathen, Statistical Techniques in Business & Economics – McGraw Hill Irwin, 15th edition ISBN- 978-0-07-340180-5 or newer edition.

**Catalog Course Description:**

This course satisfies the MBA background requirements for quantitative analysis and production management techniques. The course will cover descriptive statistics, inferential statistics and math models with business applications to analyze management and organizational problems. Specific topics include: measures of central tendency and variation, probability distributions, estimation, hypothesis testing, regression and correlation, decision theory, linear programming, transportation and assignment models, and inventory management and queuing theory models.

Course Prerequisite: Math 141, 175 or equivalent.

**Course Objectives: Student Learning Outcomes**

The objective of this course is to provide an understanding for the undergraduate business student on statistical concepts to include measurements of location and dispersion, probability, probability distributions, sampling, estimation, hypothesis testing, regression, and correlation analysis, multiple regression and business/economic forecasting. By completing this course the student will learn to perform the following:

- 1) How to calculate and apply measures of location and measures of dispersion.
- 2) How to apply discrete and continuous probability distributions to various business problems.
- 3) To understand the meaning of a null and an alternative hypothesis as well as the meaning of type I and type II error. Further, to perform test of hypothesis as well as calculate confidence interval for a population parameter for a single mean, including use of the t and the z test.
- 4) Compute and interpret the results of Bivariate Regression and Correlation Analysis.
- 5) Be able to interpret regression results generated by a computer software.

Rubric:

Criteria (Course Objectives)	1 (Unsatisfactory)	2 (Emerging)	3 (Proficient)	4 (Exemplary)
1. How to calculate and apply measures of location and measures of dispersion.	Student cannot calculate and apply any measures of location and measures of dispersion.	Student can calculate and apply some of the measures of location and measures of dispersion.	Student can calculate and apply most of the measures of location and measures of dispersion.	Student can calculate and apply all of the measures of location and measures of dispersion.
2. How to apply discrete and continuous probability distributions to various business problems.	Student cannot apply discrete and continuous probability distributions to any problems.	Student can apply of discrete and continuous probability distributions to some problems.	Student can apply of discrete and continuous probability distributions to most of the problems.	Student can apply discrete and continuous probability distributions to all the problems.
3. Understand the Hypothesis Testing:  3.1 Understand the meaning of a null and an alternative hypothesis  3.2 Understand the meaning of type I and type II error.	3.1 Student doesn't understand the meaning of a null and an alternative hypothesis  3.2 Student understands the meaning of type I and type II error.	3.1 Student understands the meaning of a null and an alternative hypothesis or  3.2 Student understands the meaning of type I and type II error.	3.1 Student understands the meaning of a null and an alternative hypothesis or  3.2 Student understands the meaning of type I and type II error.	3.1 Student understands the meaning of a null and an alternative hypothesis and  3.2 Student understands the meaning of type I and type II error. and

<p>3.3 Be able to perform test of hypothesis</p> <p>3.4 Be able to calculate confidence interval for a population parameter for a single mean, including use of the t and the z test.</p>	<p>3.2 Student doesn't understand the meaning of type I and type II error.</p> <p>3.3 Student cannot perform test of hypothesis</p> <p>3.4 Student cannot calculate confidence interval for a population parameter for a single mean, including use of the t and the z test</p>	<p>3.2 Student understands the meaning of type I and type II error.</p> <p>3.3 Student is able to perform some test of hypothesis or</p> <p>3.4 Student is able to calculate confidence interval for a population parameter for a single mean, including use of the t and the z test</p> <p>(2 out of 4)</p>	<p>the meaning of type I and type II error.</p> <p>3.3 Student is able to perform some test of hypothesis or</p> <p>3.4 Student is able to calculate confidence interval for a population parameter for a single mean, including use of the t and the z test</p> <p>(3 out of 4)</p>	<p>3.3 Student is able to perform some test of hypothesis and</p> <p>3.4 Student is able to calculate confidence interval for a population parameter for a single mean, including use of the t and the z test</p>
<p>4. Compute and interpret the results of Bivariate Regression and Correlation Analysis.</p>	<p>Student cannot compute and interpret the results of Bivariate Regression and Correlation Analysis.</p>	<p>Student can compute and interpret some of the results of Bivariate Regression and Correlation Analysis.</p>	<p>Student can compute and interpret most of the results of Bivariate Regression and Correlation Analysis.</p>	<p>Student can compute and interpret all of the results of Bivariate Regression and Correlation Analysis.</p>

5. Be able to interpret regression results generated by computer software.	Student cannot interpret regression results generated by a computer software	Student can fairly interpret regression results generated by a computer software	Student can interpret regression results generated by a computer software well	Student can interpret regression results generated by a computer software excellently
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Statement of Ethical and Professional Conduct:

The College of Business and technology at Texas A&M University – Commerce faculty, staff and students will follow the highest level of ethical and professional behavior. We will strive to be recognized as a community with legal, ethical and moral principles and to teach and practice professionalism in all that we do.

In an academic environment we will endeavor to not only teach these values but also to live them in our lives and daily work. Faculty and staff will be held to the same standards and expectations as our students. Failure to abide by these principles will result in sanctions up to and including dismissal.

Actionable Conduct:

These are five different types of actions that will bring sanction. They are:

1. Illegal activity: Violation of any local, state or federal laws that prohibit the offender from performance of his or her duty.
2. Dishonest conduct: Seeking or obtaining unfair advantage by stealing or receiving copies of tests or intentionally preventing others from completing their work. In addition falsifying of records to enter or complete a program will also be considered dishonest conduct.
3. Cheating: using someone else’s ideas and not giving proper credit.
4. Plagiarism: using someone else’s ideas and not giving proper credit.
5. Conclusion: Acting with others to perpetrate any of the above actions regardless of personal gain.

Sanctions: In the case of staff or faculty the immediate supervisor will be the arbiter of actionable behavior and will use Texas A&M University - Commerce and/or Texas A & M University System Policy and Procedures as appropriate to guide sanctions.

Faculty, guided by clearly delineated policy in the course syllabus, will be arbiter for in -class violations. All violations will be reported to the dean of the college of Business and technology to assure equity and to provide appropriate counsel. In addition, the Dean will maintain the records of violations by students. Second violations will be reviewed by the Dean and sanctions beyond those of the faculty up to and including suspension and permanent expulsion from Texas A&M University – Commerce will be considered. Faculty and students are guided by the current undergraduate and graduate catalogs of the university as well as The Students Guidebook. Faculty, Staff and Students will always be afforded due process and review as appropriate.

#### Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library, Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

[StudentDisabilityServices@tamuc.edu](mailto:StudentDisabilityServices@tamuc.edu)

#### Grading Policy:

Grade Component	Points
Four Assignments (4*125)	500
Final Exam (Chapters 5-13)	500

Final grade in the course is the average from the student's total score from the sum of (Assignments + Final) above.

Average Range	Grade
90%-100%	A
80%-89%	B

70%-79%	C
60%-69%	D
Below 60%	F

## EXAMS SCHEDULE

Exams	Window Period starts*	Window Period ends**	Chapters Covered
<b>Final Exam (Seven hrs.)</b>	<b>Morning of Tuesday, Aug 11th , 2015</b>	<b>Midnight of Wednesday, Aug 12th, 2015</b>	<b>5,6,7,8,9,10 and 13</b>

\*Uploading will be done in the morning (8 a.m.) of the starting date. The Final has a two-day window period with time limit once you start the tests. It has a Seven-hour time limit. The Exam is a one-take Exam. That is, you have to finish the Exam in a single take.

\*\*Mid-night (11:59 p.m.) of the Last Date. Start at least 7 hours earlier than 11:59 p.m. of the last date for the Final. Once the time passes 11:59 p.m. of the last date or you have spent the given time limit for the test (whichever comes first), the system will kick you out of the test. So, be very careful about the time remaining while taking the test.

### NOTE THE FOLLOWING:

1. Feel free to ask questions through email or other online tools, especially the virtual office. I am accessible 24/7 through these channels even during weekends or holidays. You can ask any question related to the course topics in the virtual office and I try to answer them within few hours (maximum 24 hours). In the virtual office or students' forum you can also try to answer others' questions. But you are expected to maintain etiquette and decency in your responses.
2. This syllabus is tentative for the semester. It is meant to be a guide. Certain topics may be stressed more or less than indicated in the text books and, depending on class progress, certain topics may be omitted.
3. Homework problems are assigned and graded every week. Solution to Assignment problems will be provided after the deadline for submission.
4. Missed examination: Missing Homework Assignment will result in zero score while missing the Final will result in grade "F". There will be no make-up Exam or make-up Assignment.
5. I provide detailed Instructions with examples for each Chapter. I post the links to the Chapter Instructions in the Announcement Section.
6. Students are expected to:
  - a. Read text assignments as scheduled.

- b. Read the chapter Instructions provided by the Professor. .
- c. Work the assigned homework problems independently. Submit the homework problems due as indicated in the appropriate drop box.
- d. Read the regular announcements in the Announcement section of the e-college and download the posted materials with download links.

7. Demeanor: “All students enrolled at the university shall follow tenets of common decency and acceptable behavior conducive to a positive learning environment”. See Students Guide Book.

8. Attendance Policy: In the online course there is no class attendance. But assignments and tests have corresponding due dates.

Topical Course Schedule:

<b>Text Assignment</b>	<b>Topic</b>	<b>Assignment/ Test</b>	<b>Due Date</b>
<b>Chapter 1</b>	<b>What is Statistics?</b>		<b>Class starts on July 13, 2015</b>
<b>Chapter 2</b>	<b>Describing Data- Frequency Distribution and Graphs</b>		
<b>Chapter 3</b>	<b>Describing Data-Measures of Central Tendency</b>	<b>Assignment 1</b>	<b>11:59 pm Monday, July 20th</b>
<b>Chapter 5</b>	<b>A Survey of Probability Concepts</b>		
<b>Chapter 6</b>	<b>Discrete Probability Distributions</b>		
<b>Chapter 7</b>	<b>The Normal Probability Distribution</b>	<b>Assignment 2</b>	<b>11:59 pm Monday, July 27th</b>
<b>Chapter 8</b>	<b>Sampling Methods and the Central Limit Theorem</b>		
<b>Chapter 9</b>	<b>Estimation and Confidence Intervals</b>	<b>Assignment 3</b>	<b>11:59 pm Monday, August 3rd</b>
<b>Chapter 10</b>	<b>One-Sample Tests of Hypothesis</b>		

<b>Chapter 13</b>	<b>Linear Regression and Correlation</b>	<b>Assignment 4</b>	<b>11:59 pm Monday, August 10th</b>
<b>Chaps. 5, 6, 7, 8, 9, 10 and 13</b>	<b>Comprehensive Final (7 hours)</b>	<b>Final Exam</b>	<b>Morning of Tuesday, August 11th – Midnight of Wednesday, August 12th, 2015</b>

**HOME WORK PROBLEMS TO BE TURNED IN-**

The Home Assignments are to be turned in by the Midnight of the due date also indicated on top of each Assignment. **NO LATE SUBMISSION WILL BE ACCEPTED**

Chapters	Problem(s)	<b>Due by (Midnight:11:59 pm of)</b>
Chaps. 1, 2 & 3	Assignment 1 (posted in announcement of e-college)	<b>Monday, July 20th, 2015</b>
Chaps. 5, 6 & 7	Assignment 2 (posted in announcement of e-college)	<b>Monday, July 27th, 2015</b>
Chaps. 8 & 9	Assignment 3 (posted in announcement of e-college)	<b>Monday, August 3rd, 2015</b>
Chaps. 10 & 13	Assignment 4 (posted in announcement of e-college)	<b>Monday, August 10th, 2015</b>

Submit your Answers in the respective drop box of e-college