COURSE SYLLABUS
MAT300: Statistics

Course Description

This course is concerned with the increasing complexity confronting citizens in today's world. It covers the role that statistics can play in the decision-making process. It also covers statistical procedures aimed at presenting, interpreting, planning, and conducting statistical analysis.

General Course Information

Number of Units/Weeks	4/10
#Hours Lecture/#Hours Laboratory/#Hours Homework	40/0/80
Prerequisite(s)	MAT162
Co-requisites (s)	None
Course Developer(s)	Dr. S. Marc Azordegan Steve Cormier, MA Ed
Date Approved / Last Review	November 2013 / July 2016

Learning Outcomes

- Analyze and use descriptive and inferential statistical procedures.
- Identify methods for collection data.
- Describe and interrupts statistical graphical display.
- Identify measures of center and variation.
- Identify and calculate all types of Probabilities distribution, and their applications.
- Analyze and build confidence interval to estimate population parameters.
- Perform tests of hypothesis for population.
- Identify the appropriate qualitative/quantitative statistical procedures for specific problems relevant to management.
- Identify and design research project in which the elements involved in the research process is explicitly identified.
- Apply statistical concepts to real-life situation.

Instructional Methods Employed in this Course

- Hands-on exercises
- Research
- Practical application of theory and skills in authentic projects

- Build on prior knowledge and experience of students to enhance richness of class activities

Information Resources for this Course

📖   **Textbook**

Larson. Farber. (2014). Elementary Statistics (5th ed.). PrenticeHall.

🗁   **Other Materials**

Calculator

🖰   **Web Site Readings**

The following are Internet sites that may be explored by students who desire further reading and information on the topic of statistics. Please note that such sites come and go, or sometimes change addresses. You will find numerous other sites just by using some of these addresses.

> www.rci.rutgers.edu/~cabrera/401/123.html
> (Emphasis on regression)
> www.wag.smith.edu/socweb/201/session10.html
> Emphasis on sampling distribution)
> www.forum.swarthmore.edu/dr.math/problems/sauter10.15.97.html
> (Emphasis on normal distribution)
> www.zebu.voregon.edu/1996/es202/12.html (Emphasis
> on mean and deviations)
> www.utexas.edu/ftp/pub/courses/mis311f/statab4.htm
> (Emphasis on confidence
> interval) www.ocmstat,org/
> www.isi-web.org
> www.lib.stst.cmu.edu/DASL/
> www.fedstats.gov/
> www.unstat.un.org

References:

Bock, David E., Paul F. Velleman, and Richard D. DeVeaux. *Stats: Modeling the World, 1st and 2nd editions*. Boston: Pearson/Addison-Wesley.

Bock, David E., Paul F. Velleman, and Richard D. DeVeaux. *Stats: Modeling the World, 3rd edition, 2009*. Boston: Pearson/Addison-Wesley.

Moore, David S., George P. McCabe and Bruce Craig. *Introduction to Practice of Statistics, 7th edition*, 2010. New York: W. H. Freeman Co.

Peck, Roxy, Chris Olsen, and Jay Devore. *Introduction to Statistics & Data Analysis, 4th edition*, 2010. Belmont, CA: Thomson Brooks/Cole.

Starnes, Daren S., Dan Yates, and David S. Moore. *The Practice of Statistics, 4th edition*, 2010. New York: W.H. Freeman.

Watkins, Ann, Richard Scheaffer and George W. Cobb. *Statistics: From Data to Decision, 2nd edition*, 2010. John Wiley & Sons.

Watkins, Ann, Richard Scheaffer, and George W. Cobb. *Statistics in Action: Understanding a World of Data. Emeryville*, CA: Key Curriculum Press.

Yates, Daniel S., David S. Moore, and George P. McCabe. *The Practice of Statistics*. New York: W.H. Freeman, 1999.

Yates, Daniel S., David S. Moore, and Daren S. Starnes. *The Practice of Statistics, 2nd edition, 3rd edition*. New York: W.H. Freeman.

Table/Topics & Assignments

Types of Assignments:
Lecture -
Considered Lecture Hours

Classroom Discussion -
Considered Lecture Hours

In Class Critique -
Considered Lecture Hours

Delivering Oral Presentations -
Considered Lecture Hours

In Class (IC) Exercise -
Considered Lecture Hours

Reading -
Considered Homework, work done outside of class

WebClass lesson (non-online courses) –
Considered Homework, work done outside of class

Lab Work -
Considered Lab Hours

Quiz, Midterm or Final -
Considered Lecture Hours

Week 1

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 1A	Class Introduction	0.5	-	-	-	-
LEC 1B	Chapter 2: Mean, Variance, Standard Deviation, Unusual and Very Unusual Numbers	2.5	-	-	-	-
IC 1A	Relevant Chapter Exercises	0.5	-	-	-	-
IC 1B	Term Paper Discussion	0.5	-	-	-	-
ELP 1A	Assignment 1: Chapter 2 worksheet	-	-	3.5	40	Week 2
Homework	Read Chapter 5 (Assessed by performance on Midterm)	-	-	6.5	-	-
Total		4	0	10.0	40	

Week 2

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 2A	Chapter 5: Normal Distribution	3.0	-	-	-	-
IC 2A	Relevant Chapter Exercises	0.5	-	-	-	-
IC 2B	Solutions to Assignment 1	0.5	-	-	-	-
ELP 2A	Assignment 2: Chapter 5 worksheet	-	-	3.5	40	Week 3
Homework	Read Chapter 6 (Assessed by performance on Midterm)	-	-	6.5	-	-
Total		4	0	10.0	40	

Week 3

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 3A	Chapter 6: Confidence Intervals	3.0	-	-	-	-
IC 3A	Relevant Chapter Exercises	0.5	-	-	-	-
IC 3B	Solutions to Assignment 2	0.5	-	-	-	-
ELP 3A	Assignment 3: Chapter 6 worksheet	-	-	3.5	40	Week 4
Homework	Read Chapter 7 (Assessed by performance on Midterm)	-	-	6.5	-	-
Total		4	0	10.0	40	

Week 4

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 4A	Chapter 7: Hypothesis Testing	3.0	-	-	-	-
IC 4A	Relevant Chapter Exercises	0.5	-	-	-	-
IC 4B	Solutions to Assignment 3	0.5	-	-	-	-
ELP 4A	Assignment 4: Chapter 7 worksheet	-	-	3.5	40	Week 5
Homework	Read Chapter 9 (Assessed by performance on Midterm)	-	-	6.5	-	-
Total		4	0	10.0	40	

Week 5

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 5A	Chapter 9: Correlation	3.0	-	-	-	-
IC 5A	Relevant Chapter Exercises	0.5	-	-	-	-
IC 5B	Solutions to Assignment 4	0.5	-	-	-	-
ELP 5A	Assignment 5: Chapter 9 worksheet	-	-	3.5	40	Week 6
Homework	Study for Midterm. Review homework assignments 1-5, optional Midterm Review Worksheet	-	-	11.5	-	-
Total		4	0	15.0	40	

Week 6

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
IC 6A	Solutions to Assignment 5	0.5	-	-	-	-
IC 6B	Review for Midterm	0.5	-	-	-	-
Exam 6A	Midterm Exam	3	-	-	150	-
ELP 6A	Research Proposal	-	-	3.5	40	Week 7
Homework	Read Chapter 3 (Performance Assessed on Final Exam)	-	-	6.5	-	-
Total		4	0	10.0	190	

Week 7

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 7A	Chapter 3: Probability and Probability Distributions	3.0	-	-	-	-

IC 7A	Relevant Chapter Exercises	0.5	-	-	-	-
IC 7B	Solutions to Midterm Exam	0.5				
ELP 7A	Assignment 7: Chapter 3 Worksheet	-	-	3.5	40	Week 8
Homework	Read Chapter 4 (Performance Assessed on Final Exam)	-	-	6.5	-	-
Total		4	0	10.0	40	

Week 8

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 8A	Chapter 4: Binomial Distributions	3.0	-	-	-	-
IC 8A	Solutions to Assignment 7	0.5	-	-	-	-
IC 8B	Review for Midterm	0.5	-	-	-	-
ELP 8A	Assignment 8: Chapter 4 Worksheet	-	-	3.5	40	Week 9
Homework	Complete Research Project Data Collection	-	-	11.5	-	-
Total		4	0	15.0	40	

Week 9

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
LEC 9A	Workshop: Finish Research Project, optional Final Review Worksheet	3.5	-	-	-	-
IC 9A	Solutions to Assignment 8	0.5	-	-	-	-
Course Project	Project is due at the end of class	-	-	-	380	Week 9
Homework	Study for Final Exam	-	-	10	-	-
Total		4	0	10	380	

Week 10

Type	Topic/Discussion	Lecture Hours	Lab Hours	Homework Hours	Point Value	Due Date
IC 10A	Review for Final	0.5	-	-	-	-
Exam 10A	Final Exam	3.5	-	-	150	Week 10
Total		4	0	0	150	

Course Hours Summary

Week	Topic	LEC Hours	LAB Hours	HW Hours
1	Calculate the mean, variance and standard deviation of a set of data and determine any unusual or very unusual numbers	4	0	10
2	Calculate probability of normally distributed data	4	0	10
3	Constructing confidence intervals	4	0	10
4	Conduct hypothesis tests	4	0	10
5	Calculate Correlation	4	0	15
6	Mid Term Exam	4	0	10
7	Calculate Basic Probabilities	4	0	10
8	Calculate Binomial probabilities	4	0	15
9	Workshop/Course Project	4	0	10
10	Final Exam	4	0	0
Total		40	0	100

Table/Point Breakdown

Week	Assignment	Possible Points	Percent of Grade
1-8	Assignments 1-8, 40 points each	320	32%
9	Course Project	380	38%
6	Midterm Exam	150	15%
10	Final Exam	150	15%
Total		1000	100%

Your Grades for this Course

Your final grade for this course will be based on an assessment by the Instructor of your performance on a number of course activities, which may include objective tests, classroom exercises, laboratory demonstrations, project papers, or other types of activities. The chart below indicates in what activities you will engage, how many possible points can be earned for each activity, and the percentage of your final grade that will be accounted for by each activity. Students in this course should be graded following Coleman University assessment practices and policies. A point system is used in the University to indicate student performance on various required activities or projects. For this course, it is recommended that points be distributed as follows:

Coleman University Grade Assignment Policy:

Percent	Letter Grade	Grade Points
94-100	A	4
90-93	A-	3.67
87-89	B+	3.33
84-86	B	3
80-83	B-	2.67
77-79	C+	2.33
74-76	C	2
70-73	C-	1.67
67-69	D+	1.33
64-66	D	1
60-63	D-	0.67
N/A	INC	0
N/A	W	0
60 or above	CR	0
59 or below	NC	0
N/A	I	0
N/A	W	0
N/A	AU	0
N/A	TR	0
N/A	WV	0

Legend	
CR = Credit	NC = No Credit
I = Incomplete	W = Course Withdrawal
AU = Audit	TR = Transfer Credit
WV = Waiver	

Academic Accommodation / Adjustment Policy:

In accordance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA), Coleman University offers accommodations to students with documented physical, psychological, and/or cognitive disabilities. Coleman University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to offer equal educational opportunities to qualified disabled individuals.

To qualify for an academic accommodation under ADA, the student must provide adequate documentation of a disability. Students seeking academic accommodations should contact the campus ADA Coordinator at 858-966- 3953 or via email at ada@coleman.edu. The ADA Coordinator will review the documentation provided and verify ADA coverage. Students covered under ADA must meet with the ADA Coordinator at the beginning of every term to determine the appropriate academic accommodations. Failing to meet with the ADA Coordinator at the beginning of every term may impact the availability of accommodations.

After the academic accommodations have been determined, the students' instructors will be notified by the ADA Coordinator. If any problems or concerns regarding the provision of accommodations occur, the student must inform the ADA Coordinator. If the student feels accommodation is not being made appropriately, the student may follow the published Student Grievance Procedures