MATH120 - Statistics   Cypress College Course Syllabus Spring 2017

Instructor/Course Info: Jorge Ramirez   Instructor of Mathematics, Physics and Astronomy.
                       Email: jramirez@cypresscollege.edu   Website: jramirezmath.weebly.com
                       MATH120 – (21768) T/R 12:25 pm – 2:30pm   SEM-116 &
                       MATH120 – (23471) T/R 2:40 pm – 4:45pm   SEM-116

Prerequisite: Math 24 or Math 040 (Intermediate Algebra) or Math 041 (Combined Algebra I and II) with a "C" or better or math skills clearance.

Course Description: This course is an introduction to the elements of statistical analysis which includes an intuitive approach to the study of probability and probability distributions, measures of central tendency and dispersion, sampling techniques, parametric and non-parametric tests of hypotheses, point and interval estimation, linear regression and correlation. Applications to business, biological sciences, and social sciences are emphasized. Students will use computer software and/or graphing calculators for statistical analysis of various topics.

Student Learning Outcomes (**SLO**):
1. Given a set of data, the student will be able to collect, organize and summarize data through the use of graphs and by calculating measures of central tendency and measures of dispersion at a proficient level.
2. The student will be able to compute probabilities using basic probability rules, counting techniques, and probability distributions, including sampling distributions at a proficient level.
3. Given sample data or sample statistics, the student will be able to estimate and compare population parameters through the use of confidence intervals and hypothesis testing at a proficient level.

Instructional Objectives:
Upon completion of this course, the student will be able to:
1. Define statistics and distinguish between descriptive statistics and inferential statistics.
2. Identify various sampling techniques, detect bias in sampling, and recognize graphical   misrepresentations of data.
3. Organize data using bar charts, pie charts, pareto charts, histograms, ogive graphs, stem---leaf displays, frequency polygons, time---series graphs and boxplots.
4. Identify/compute from a given data distribution, the mode, median, mean, variance, standard deviation, z-scores and outliers.
5. Describe the relation between two variables using scatter diagrams and the equation of the least-squares regression line.
6. Demonstrate an understanding of and apply the basic notions of probability theory.
7. Use probability distributions including the binomial, normal, Student's t, Chi---squared, Poisson, and F distribution to solve problems.
8. Demonstrate an understanding of the Central Limit Theorem and the general concept of sampling distributions.
9. Test hypotheses using appropriate parametric and nonparametric methods.
10. Construct confidence intervals of population parameters using appropriate methods.
11. Utilize a graphing calculator whenever appropriate in achieving the stated instructional objective.

Textbook: *Statistics: Informed Decisions Using Data*, Sullivan III, 5th Edition

Calculator: Graphing calculator TI-83/84 required. I will be using a TI-84. It would be much easier if you also use a TI-84 (we will discuss different models). Cell phones are not permitted as calculator substitutes.

Homework: Assignments will be checked weekly. Students are encouraged to work together, engage in discussion and collaborate. Students must attempt each problem and show work for full credit. Do not just copy solutions from the back of the text.

Activities: Group activities will consist of supplemental in class assignments. If you miss class you will receive a zero for the activity. No make ups, so show up to class.

Project: Students in groups of 4 will collect, analyze and interpret data with a hypothesis test. Projects will be presented via classroom media. Full details will be given on project outline.

Make-up Policy: The simplified version is **No make-ups** on short notice or after the due date. The formal policy is as follows, Make-up policy for Exams: Prior arrangements must be made at least 2 weeks in advanced with instructor, if the student has a serious and compelling reason (documentation is required). If any of the above requirements is not met, a score of zero will be issued for the missed exam. Make-up policy for assignments and activities: No make-up for in-class activities; zero to half credit for late homework may be given with prior notification.

Attendance and student conduct policy: Attendance is the responsibility of the student. Students are expected to demonstrate respect for the instructor and other students. This includes but is not limited by interfering with the rights of others to listen and participate or harassing others in anyway. Students should be in conduct of statements in college catalog regarding sexual harassment and, student rights and responsibilities. Absences do not excuse due dates (See make-up policy). A little Advice: Show up, take notes and do the homework.

Student Support Services: A Quick Guide to Student Services is found on page 123 of the Schedule of Classes. A more comprehensive explanation of the Cypress College Students Services is found on page 114 of the Schedule of Classes.

Disability Support Services (DSS): A student who feels he or she may need an accommodation based on the impact of a disability should contact Disabled Students Program and Services at (714) 484−7104 or visit DSPS on the first floor of the Cypress College Complex, Room 100. For students who have already been determined eligible for DSPS services, please provide the instructor with the proper form from DSPS in a timely manner, at the beginning of the semester and at least one week prior to the verified and identified need. Please visit the DSPS website for more information.

Campus Safety: For emergencies, lost and found, and parking, call (714) 484−7387. Trained Safety Officers are on duty 24 hours a day, 7 days a week. Any criminal action or emergency must be reported to Campus Safety. Campus Safety is located in the business building on the first floor adjacent to parking lot #1.

Emergency Procedure: If required to evacuate a classroom/building, students will proceed to a clear and safe area away from the evacuated building. Take all personal belongings with you.

Health Center: To make use of health services or to get further information, contact the Health Center located on the first floor of the south side of Gymnasium II Building by calling (714) 484−7361, or stop by the Center.

Library and Learning Resource Center: Please refer to the LLRC website for hours and services.

Food and Beverage Policy: To maintain a cleaner classroom environment and to avoid distractions, food and drinks (except for water in closed containers) may not be consumed in the classroom. Students eating in the room will be asked to leave.

Tobacco Use Policy: Smoking is restricted to areas 20 feet or further from any building.

Sexual Harassment and Discrimination Policy: The North Orange County Community College District Non-Discrimination Statement is found on page 40 of the College Catalog. Any instance of sexual harassment or discrimination will not be tolerated.

Student Rights and Responsibilities: Students are expected to be knowledgeable of the guidelines, policies and procedures in the College Catalog.

Cheating/Plagiarism: Cypress College maintains an environment in which academic honesty is expected; academic dishonesty, cheating and plagiarism are not tolerated. Please see Academic Honesty Policy in college catalog pg 9. Any student in violation of this code and policy in any assignment or examination related to this course shall be subject to the options specified in the policy statement. DON'T DO IT; STUDY, STUDY, STUDY and you will be fine.

Grading Criteria:

			Grade Scale:	
Project Presentation	100 points		"A" ≥ 675	90%
Homework/Activities	100 points		"B" ≥ 600	80%
Exams - 4 (100 pts. ea.)	400 points		"C" ≥ 525	70%
Final	150 points		"D" ≥ 450	60%
Total	750 points		"F" < 450	

_____

Weekly **PROJECTED** Schedule*

Week 1 (Jan. 31 / Feb. 2):	1.1-1.3 / 1.4-1.6	
Week 2 (Feb. 7 / 9):	2.1-2.2 / 2.3-2.4	
Week 3 (Feb. 14 / 16):	3.1-3.3 / 3.4-3.5	
Week 4 (Feb. 21 / 23):	Review / Exam1	**Exam 1: Ch1-3 (Th, Feb. 23)**
Week 5 (Feb. 28 / Mar. 2):	5.1-5.2 / 5.3-5.4	
Week 6 (Mar. 7 / 9):	5.5-5.6 / 6.1-6.2	
Week 7 (Mar. 14 / 16):	7.1-7.2 / 7.3 & Review	
Week 8 (Mar. 21 / 23):	Exam2 / 8.1-8.2	**Exam 2: Ch 5-7 (T, Mar. 21)**
Week 9 (Mar. 28/ 30):	9.1-9.2 / 9.3-9.4,10.1	
Week 10 (Apr. 4 / 6):	10.2-10.3 / 10.4-10.5 & Review	
Spring Break (Apr. 11 / 13):	No Instruction	
Week 11 (Apr. 18 / 20):	Exam3 / 11.1-11.2	**Exam 3: Ch 8-10 (T, Apr. 18)**
Week 12 (Apr. 25 / 27):	11.3-11.5 / 12.1-12.2	
Week 13 (May. 2 / 4):	13.1 & 4.1 / 4.2-4.3	
Week 14 (May. 9 / 11):	14.1-14.2 / Review	
Week 15 (May. 16 / 18):	Exam4 / 15.1 & 15.3	**Exam 4: Ch 11-14&4 (T, May. 16)**
Week 16 (May. 23 / 25):	Projects & Review / Final	**Final: Ch 1-15 (Th, May. 25)**

_____

*This guideline is an estimate and subject to change. Any modifications will be discussed in class. If you do not attend class it is your responsibility to obtain any changes from the instructor or a classmate.

Important dates

Final Exam Date: Thursday May 25th regular class hours.
Drop deadlines:
Febuary 12, 2016: last day to **Drop** underline without a "W" appearing on transcript
April 30, 2016: last day to **Drop** a class with a "W."

Classmate Info

1.   2.

3.   4.