

PRAIRIE VIEW A&M UNIVERSITY
Department of Mathematics

MATH 2003 ELEMENTARY STATISTICS			
Department of	Mathematics	College of	Arts and Sciences
Instructor Name:	<i>Mohammed A. Shayib, Ph. D.</i>		
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		P.O. Box	519
		Mail Stop	2225
		Prairie View, TX 77446	
Office Hours:	MWF		
Virtual Office Hours:	BY APPOINTMENT		
Course Location:	<i>TBD</i>		
Class Meeting Days & Times:	MTWR 08:00 – 10:20am		
Course Abbreviation and Number:		MATH 2003	
Catalog Description:	MATH 2003. Elementary Statistics. (3-0) Credit 3 semester hours. An introduction to the concepts and methods of statistics, topics including probability, random variables, binomial and normal distributions, random sampling, statistical inference, estimation, testing hypotheses, linear regressions and correlation, problem solving, chi-square test and categorical data, and analysis of variance. Prerequisites: Successful completion of MATH 1103 or MATH 1113 with a grade of “C” or better or the approval of the Mathematics Department.		
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Co-requisites:	NA		
Required Text:	Statistics, Informed Decisions Using Data, 3rd Edition, by Sullivan, III, Michael, Prentice Hall, (packaged with MyStatLab)		
Required Calculator: Ti - 83, TI - 83 Plus, TI - 83 Plus, Silver Edition, or TI 84 Version			
Recommended Text:	NA		
Access to Learning Resources:	PVAMU Library: phone: (936) 261-1500; web: http://www.tamu.edu/pvamu/library/		

	University Bookstore: phone: (936) 261-1990; web: https://www.bkstr.com/Home/10001-10734-1?demoKey=d	
Course Goals or Overview:		
	The goal of this course is to...	
	<ul style="list-style-type: none">Recognize and apply statistical terminology.	CT, CS and EQ
	<ul style="list-style-type: none">Interpret ideas of population versus sample, random variables and techniques of descriptive statistics including frequency distributions, stem and leaf plots, box-plots and scatter-plots.	EQ
	<ul style="list-style-type: none">Calculate and interpret measures of central tendency, including mean, median and mode and measures of dispersion to apply the 68-95-99.7 rule, calculator/statistical computer packages.	CT and EQ
	<ul style="list-style-type: none">Apply basic ideas of probability and its applications to statistics.	CT, CS and EQ
	<ul style="list-style-type: none">Define, explain and express discrete and continuous random variables and theoretical probability distributions with emphasis on the binomial and normal distributions.	CT and EQ
	<ul style="list-style-type: none">Apply and write the Central Limit Theorem to the sampling process.	CT and EQ
	<ul style="list-style-type: none">Estimate and evaluate the means, proportion and variance using point estimation & confidence intervals.	CT and EQ
	<ul style="list-style-type: none">Demonstrate and apply skills in hypothesis testing.	CT and EQ
	<ul style="list-style-type: none">Use linear regression to find the "line of best fit" for two variables and calculate and interpret correlation coefficients.	CS
	<ul style="list-style-type: none">Apply the chi-square procedure.	CT and EQ
	<ul style="list-style-type: none">Recognize and appreciate valid statistical techniques versus statistical methods that are misapplied, inaccurately presented or misleading.	CT and EQ

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

Exams – written tests designed to measure knowledge of presented course material

Exercises – written assignments designed to supplement and reinforce course material

Projects – web development assignments designed to measure ability to apply presented course material

Class Participation – daily attendance and participation in class discussions will contribute to your overall course grade

Grading Policy

Tests	25%
Mid term	20%
Homework, attendance, projects, quizzes, presentations	30%
Final exam	25%

Final Grade

90 – 100	A	80 – 89	B	70 – 79	C	60 – 69	D
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Course Procedures

Homework and tests are timed. They are assigned on the computer through out the semester.

Formatting Documents:

Microsoft Word is the standard word processing tool used at PVAMU. If you're using other word processors, be sure to use the "save as" tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.

Exam Policy

Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook). If you cannot attend an exam or a quiz, please see me before it takes place so that we can make appropriate arrangements

Professional Organizations and Journals

NA

References

NA

University Rules and Procedures

Disability statement (See Student Handbook):

Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

Academic misconduct (See Student Handbook):

You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

Forms of academic dishonesty:

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

Nonacademic misconduct (See Student Handbook)

The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

Sexual misconduct (See Student Handbook):

Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

Attendance Policy:

Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

Student Academic Appeals Process

Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

Technical Considerations for Online and Web-Assist Courses

Minimum Hardware and Software Requirements:

- Pentium with Windows XP or PowerMac with OS 9
- 56K modem or network access
- Internet provider with SLIP or PPP
- 8X or greater CD-ROM
- 64MB RAM
- Hard drive with 40MB available space
- 15" monitor, 800x600, color or 16 bit
- Sound card w/speakers
- Microphone and recording software
- Keyboard & mouse
- Netscape Communicator ver. 4.61 or Microsoft Internet Explorer ver. 5.0 /plug-ins
- Participants should have a basic proficiency of the following computer skills:
 - Sending and receiving email
 - A working knowledge of the Internet
 - Proficiency in Microsoft Word
 - Proficiency in the Acrobat PDF Reader
 - Basic knowledge of Windows or Mac O.S.

Netiquette (online etiquette): students are expected to participate in all discussions and virtual classroom chats when directed to do so. Students are to be respectful and courteous to others in the discussions. Foul or abusive language will not be tolerated. When referring to information from books, websites or articles, please use APA standards to reference sources.

Technical Support: Students should call the Prairie View A&M University Helpdesk at 936-261-2525 for technical issues with accessing your online course. The helpdesk is available 24 hours a day/7 days a week. For other technical questions regarding your online course, call the Office of Distance Learning at 936-261-3290 or 936-261-3282

Communication Expectations and Standards:

All emails or discussion postings will receive a response from the instructor within 48 hours.

You can send email anytime that is convenient to you, but I check my email messages continuously during the day throughout the work-week (Monday through Friday). I will respond to email messages during the work-week by the close of business (5:00 pm) on the day following **my receipt** of them. Emails that I receive on Friday will be responded to by the close of business on the following Monday.

Submission of Assignments:

In case that the course will run as an E-course, the following will apply

Assignments, Papers, Exercises, and Projects will distributed and submitted through your online course. Directions for accessing your online course will be provided. Additional assistance can be obtained from the Office of Distance Learning.

Discussion Requirement:

Because this is an online course, there will be no required face to face meetings on campus. However, we will participate in conversations about the readings, lectures, materials, and other aspects of the course in a true seminar fashion. We will accomplish this by use of the discussion board.

Students are required to log-on to the course website often to participate in discussion. It is strongly advised that you check the discussion area daily to keep abreast of discussions. When a topic is posted, everyone is required to participate. The exact use of discussion will be determined by the instructor.

It is strongly suggested that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board.

COURSE OUTLINE: The course will cover Chapters 1-12.

Week	Textbook Sections
1, 2	Chapter 1 Data Collection 1.1 Introduction to the Practice of Statistics 1.2 Observational Studies, Experiments and Simple Random Sampling Student presentation evaluating experiments and sampling 1.3 Other Effective Sampling Methods 1.4 Sources of Errors in Sampling 1.5 Bias in sampling 1.6 The Design of Experiments Students organize and deliver design of experiments presentation
3	Chapter 2 Organizing and Summarizing Data from One Variable 2.1 Organizing Qualitative Data 2.2 Organizing Quantitative Data: The Popular Displays 2.3 Additional Displays of Quantitative Data 2.4 Graphical Misrepresentation of Data Student group project and presentation on Qualitative Data use.
4	Chapter 3 Numerically Describing Data from One Variable 3.1 Measures of Central Tendency 3.2 Measures of Dispersion 3.4 Measures of Position 3.5 The Five Number Summary and Box Plots Box Plots presentation by students expressing interpretation.
5, 6	Chapter 4 Describing the Relation between Two Variables 4.1 Scatter Diagrams and Correlation

	4.2 Least Squares Regression
7	Chapter 5 Probability 5.1 Probability Rules 5.2 The Addition Rule and Complements 5.3 Conditional Probability and the General Multiplication Rule Probability and Addition Rule Presentations to class.
8, 9	Chapter 6 Discrete Probability Distributions 6.1 Discrete Random Variables 6.2 The Binomial Probability Distribution Student Presentations explaining Probability Distribution.
9, 10	Chapter 7 The Normal Probability Distribution 7.1 Properties of the Normal Distribution 7.2 The Standard Normal Distribution 7.3 Applications of the Normal Distribution 7.4 Assessing Normality Predict Normal Probability Distribution in student presentation.
11	Chapter 8 Sampling Distributions 8.1 Distribution of the Sample Mean 8.2 Distribution of the Sample Proportion Group student projects to solve and explain sampling.
12	Chapter 9 Estimating the Value of a Parameter Using Confidence Intervals 9.1 The Logic in Constructing Confidence Intervals about a Population Mean when the Population Standard Deviation is Known 9.2 Confidence Intervals About a Population Mean in Practice Where the Population Standard Deviation is Unknown 9.3 Confidence Intervals About a Population Proportion 9.5 Putting it All Together: Which Procedure Do I Use? Students presentations answer the question “ Which procedure do I use?” (9.5). Deliver and express reasoning of answer.
13	Chapter 10 Testing Claims Regarding a Parameter 10.1 The Language of Hypothesis Testing 10.2 Testing Claims About a Population Mean Assuming the Population Standard Deviation is Known 10.3 Testing Claims About a Population Mean in Practice 10.4 Testing Claims About a Population Proportion 10.5 Putting it All Together: Which Method Do I Use? Students presentations answer the question “ Which procedure do I use?” (10.5). Deliver and express reasoning of answer.
14	Chapter 11 Inference on Two Samples 11.1 Inference About Two Means: Dependent Samples 11.2 Inference About Two Means: Independent Samples 11.3 Inference About Two Population Proportions Student presentations compare and evaluated the two samples.
15	Chapter 12 Inference on Categorical Data 12.1 Goodness-of-Fit Test 12.2 Contingency Tables Student Presentation and Review of Course Material. FINAL EXAM

College of Arts and Sciences Student & Staff Aspiration Statement

The faculty and staff of the College of Arts and Sciences at PVAMU are committed to providing the best possible quality education to its students. To that end, we will work hard to prepare the students for success by setting the proper academic environment and background necessary to facilitate learning. In order for us to be successful, there are some basic expectations our students must demonstrate. These expectations are a simple ingredient to foster camaraderie and '*esprit de corps*' in every class and classroom on campus. Additionally, these are lifelong fundamental learning skills to better prepare students for success in America's job market.

CAS student expectations:

- You are expected to come to class prepared and on time.
- Higher education is an investment in your future, to that end; you must endeavor to be properly equipped for class. (i.e. School supplies, text, and other supporting materials).
- Resolution of any classroom issues (i.e. Grades, course materials, etc) should begin with the instructor.
- If you must leave early, notify the instructor before the class begins, sit by the door, and exit quietly
- Be considerate of your fellow classmates; please turn off all phones, pagers and other electronic devices.
- Do not talk to other students during lecture. If you have a question or a comment on the subject being discussed, address it to the instructor directly.
- Walk quietly through the hallways, classes in other rooms may still be in session.
- Please refrain from eating, drinking, sleeping in class, using profanity, and engaging in any form of horseplay in the classroom it is disruptive to your fellow classmates.
- Be respectful, civil, polite and considerate when dealing with your professors as well as your fellow classmates.
- Student attire is based on personal preference and taste. The rule of thumb is simple, if it projects a statement which is offensive to others, then maturity should dictate that it is probably not a good idea to wear to class.
- Enthusiasm is infectious, a smile and positive attitude will go far to motivate and charge your professors and fellow classmates

How students enroll in Course Compass

To enroll in a typical course, a student needs to have a:

- **Student access code, a valid credit card, or a PayPal account**– Students get an access code with a new book purchase or by buying the code separately in a student access kit/card at the campus bookstore. Students can also buy access to a course online with a credit card or PayPal account while they are enrolling.

Important: The student access code is nontransferable and can be used only once .

- **Course ID** – This number, which identifies your particular course, consists of your last name followed by five digits, for example, wong63229. You must give your students the course ID before they can enroll.
- **Email address** – The student's registration and enrollment confirmation will be sent to this email address. This address is also available to you, the instructor, for course-based communications.

A student who does not already have a Pearson account and is enrolling for the first time should follow the registration instructions on the home page of the [CourseCompass website](#).

To assist these students, print the instructions and distribute them, along with the course ID for your course.

A student who already has a Pearson account performs steps 1 through 6 in [Registering and Enrolling in a New Subject](#) below to enroll in a new course.

To assist these students, copy the instructions to a document and distribute. You may want to enter your course ID in the space provided in step 3.

Note: Students who need to enroll in another course based on the same textbook as a current or previous course should go through their Pearson Account Profile to enroll. They do not need to use a new access code or make a payment. Direct these students to:

- Go to <https://register.pearsoncmg.com/userprofile> and log in.
- Under the list of CourseCompass products, click **Enroll in a Course**.
- Enter the course ID received from the instructor of the new course, confirm the course information, and click **Find Course**.

If the student is prompted to provide an access code or purchase course access using a credit card, the course materials do not match the previous course. The student should contact the instructor.

- Click **Enter Course Now** to start using the new course.

Registering and Enrolling in a New Subject

- Go to <http://www.coursecompass.com> and click **Register** in the Students area.
- Review the list of required items for enrolling in a course, and click **Next**.
- Enter the course ID you received from your instructor for your new course, and click **Find Course**.

Course ID: TBA once paperwork has been approved.

- Follow the instructions to either:
[Use a student access code](#) or
[Purchase access online](#)
- Print the Confirmation page to keep a record of your registration and enrollment information, your login name, and the email address used for your account.
- Click **Log In Now** to access your new course.

To use a student access code:

- Verify the course information and click **Access Code**.
- Enter your student access code and click **Next**.
- Review the license agreement and click **I Accept**.
- Indicate whether you already have a Pearson account:
 - If not, select **No** and follow the instructions to create your login name and password.
 - If you do, select **Yes** and enter your login information.

- If you're not sure, select **Not sure**. Enter your email address and click **Search**. If you have an account, you will receive your login information by email, and you can change your selection to **Yes**. If you do not have an account, change your selection to **No** and create your login information.

Click **Next**.

5. Enter or confirm the information requested on the Account information page:

- Your name and an email address that you check regularly
- School Location: Select your school country and, for schools in the U.S., enter the zip code. From the resulting list, select your school name. If it is not listed, select **Other** and enter school name, city, and state.
- Security question: Select a question from the drop-down list; then enter the answer.

Click **Next**.

To purchase course access online:

1. Click **Buy Now**.

2. Click the **Buy** button next to the course materials you want to buy. (You might see options with or without an online ebook, for example.)

3. Accept the license agreement.

4. Indicate whether you already have a Pearson account:

- If not, select **No** and follow the instructions to create your login name and password.
- If you do, select **Yes** and enter your login information.
- If you're not sure, select **Not sure**. Enter your email address and click **Search**. If you have an account, you will receive your login information by email, and you can change your selection to **Yes**. If you do not have an account, change your selection to **No** and create your login information.

Click **Next**.

5. Enter or confirm the information requested on the Account Information page:

- Your name and an email address that you check regularly
- School Location: Select your school country and, for schools in the U.S., enter the zip code. From the resulting list, select your school name. If it is not listed, select **Other** and enter school name, city, and state.
- Security question: Select a question from the drop-down list; then enter the answer.

Click **Next**.

6. Enter your payment information (credit card or PayPal account and billing information). Click **Continue**.

7. Review your order and, when you are ready, click **Place Order**.

Note: For more help with registration, go to www.coursecompass.com and click **Registration Help** under Students. For help during registration, click the **Video Tutorial** link at the top of the registration pages.