



Syllabus **MAT 225-1 Basic Statistics**

Course Information

Course Prefix/Number: **MAT 225 Section 1**
 Semester: **Spring 2020**
 Course Title: **Basic Statistics**
 Credit Hours: 3

Class Days/Times: **Tue 5:30P - 8:00P**
 Place: **PHX-GSK Virtual**

Instructor Information

Name: **Shreya Kelly**
 E-mail: **skelly@tocc.edu**

Office location: **classroom (TBD)**
 Office hours: **immediately before the class**

Course Description

Emphasizes descriptive statistics, probability, estimation, hypothesis testing, regression and correlation. This course is a sampling of statistical concepts needed by today's professionals.

Tentative Schedule

	Date	Text	Topic	Homework
1	Tue Jan 14	Chapters 1,2	1.1,1.2 2.1	Pg #11 7,8,9,10, Pg #21 19,20 Pg #57-58 16, 18, 20 (Please read the intro in page #56 before problem 15 and do not do (f))
2	Tue Jan 21	Chapters 2,3	Quiz 1 2.2, 3.1, 3.2	Pg #66 6, Pg 98-100 9,14,18,19,20,22 Pg #115 17 (except (d), 18 (only (a) and (b))
3	Tue Jan 28	Chapters 3,4	Quiz 2 3.3 4.1,4.2	Pg #129-130 7,8,10 Pg #153-155 18,19,20,23/ Pg #171-172 17,19,21,25,27
4	Tue Feb 4	Chapters 4,5	Quiz 3 4.2 5.1	Pg #173-175 30,32,33,36 Pg #207-209 12,13,16,17
5	Tue Feb 11	Chapter 5	Quiz 4 5.2, 5.3 Review for Class Exam 1	Pg #224-227 16,22,24,26 Pg#239 12,13 (Except part c),14
6	Tue Feb 18	Chapter 6	Class Exam 1 6.1	Pg #282-283 8,9,10,11

7	Tue Feb 25	Chapter 6	6.2,6.3, 6.5	Pg #310-312 26,28,30,32,34,36,38 Pg #329-330 14,15,17,18
8	Tue Mar 3	Chapter 7	Quiz 5 7.2,7.3 7.4	Pg #383-384 16,17,18 Pg #397-399 15,20,22,25,26 Please also do the below problem: Mark is an appliance salesman who works on commission. A random sample of 39 days showed that the sample standard deviation value of sales was $s = \$215$. How many more days should be included in the sample to be 95% sure the population mean μ is within \$50 of the sample mean \bar{x} ? Pg #413-414 11,12 Pg #419-420 24,26
9	Tue Mar 10	Chapter 8	Quiz 6 8.1,8.2 8.3	(Please read the intro before starting problems 11-22 in page 465) Pg #466-468 16,18,19,21,22 Pg #478-479 8,11,12
March 16-20 Spring Break: NO CLASSES				
10	Tue Mar 24	Chapter 8	Quiz 7 8.4 8.5	Pg #491-495 9,18,20 Pg #516-520 20,21,29,30
11	Tue Mar 31	Chapter 9	Quiz 8 9.1 9.2	Pg #547-548 9,15,16,17 Pg #566 7,8 (Parts a-d each and instructions for problems #7 and #8 are on page 565 after #6)
12	Tue April 7	Chapter 9	Quiz 9 9.2 Review for Class Exam 2	Pg #568 16,17 (parts a-f each)
13	Tue April 14		Class Exam 2	
14	Tue April 21	Chapter 10	M&Ms class experiment 10.1	Roll a dice (6 sided) 144 times and record the number for each roll. Then do the Chi square test to check if it is fair. Pg #639-640 18,19 Pg #638 12,13,14
15	Tue April 28		Quiz 10 Review for Final Exam	
16	Tue May 5		Final Exam	

Student Learning Outcomes

After completion of the course students will be able to:

- Create histograms and box plots.
- Find the center and spread of the data (mean, median, mode, standard deviation, range, etc).
- Find the probabilities using the addition and multiplication rules and use contingency tables.
- Use the central limit theorem and normal distributions to find the probabilities and vice-versa.
- Interpret the data using hypothesis testing (z, t and chi-square) of one and two samples.
- Critically evaluate statistics being presented in a media report including: identifying the reference value for a reported percentage, evaluating the sampling strategy, determining sources of bias, describing the difference between correlation and causation, identifying confounding variables.

Course Structure

This course will be operating on a combination of **class activity, quizzes and lectures** that will enhance the student's knowledge of mathematical concepts. Some of this work will need to be done outside of class utilizing TOCC Canvas (<https://tocc.instructure.com/login/canvas>).

Text and Materials

- **[Required]** Understandable Statistics 12E ISBN-1337119911 textbook in every class.
- **[Required]** A Ti84 or above calculator in every class.
- **[Required]** A laptop in every class.

Course Evaluation

Grades will be determined using the following scale:

Category	Weight
Quizzes	25%
Exam 1	10%
Exam 2	20%
Comprehensive Final Exam	30%
Homework	15%
Total	100%

Himdag Cultural Component

My interpretation of what Nahban said in the *Desert Smells Like Rain* is this: while the *himdag* discourages direct, exact answers, in the mathematical world, one is expected to be able to come up with a precise answer for the situation. That being said, there are a few common issues shared:

- *Baban* (coyotes) are not going to affect your homework or my tests - they didn't write either.

- While one must go through a maze to see *i'itoi*, there was no mention as to how many mazes there were to get to him. Likewise, you will discover in this course that there are many different ways to perform the algebra necessary to see the final answer.
- *I-we:tma*: for your success and the college's and the community's, you should not go work on mathematics alone – it can be a group activity (except on the tests, of course).
- *T-pik elida*: we respect each other and ourselves. We respect and take pride in our own work. We respect each other's abilities, quirks and privacy.

Policies and Expectations

Student Conduct

- Please be respectful of myself and other students in the class. Disruptive behavior may result in you being asked to leave the class. This includes but is not limited to talking, eating, rustling papers, clicking on electronics, texting or playing with your phone, late arrival and early departures (late arrival to class disrupts the learning activities and is unprofessional and disrespectful towards fellow classmates), any abusive or indecent language. Collegial behavior is required at all times. Turn off cell phones, PDAs, iPods, laptops, and other electronic devices not related to the course before entering the class.
- Cheating in my class is unacceptable. If you are caught cheating, you will be given a zero on that exam or quiz and may result in my filing an Academic Honesty Incident Report which could result in suspension or expulsion from the college.

E-mail Requirement

- All students must activate and regularly check their Tohono O'odham Community College e-mail account. It is mandatory that students use the TOCC e-mail account for all communications with the instructor.
- The instructor will not reply to any non-TOCC e-mail address the student uses to contact him.

Homework

- Each week, there will be a collection of homework/practice problems in Canvas. Please submit the following Tuesday by uploading the scanned work to canvas.

Quizzes

- Each Tuesday, you will complete a timed quiz consisting of questions over the previous week's material in the classroom by logging into Canvas. My hope is that students will work through the previous week's homework problems. There will be **no make-up quizzes**. However, at the end of the semester, I will drop your lowest quiz grade.

Exams

- There will be two timed exams and one timed **comprehensive final exam**.
- There will be **no make-up exams**.

Participation

- You are expected to participate in the statistical experiments like counting your pulse rate, counting the colors in m&ms, etc. You are encouraged to ask questions in the classroom.

Important Dates

- Drop/Full Refund deadline is **Tuesday, Jan 28th 2020**.
- Withdrawal deadline is **Monday Mar 30th 2020**.

Final Grades

They will be sent to the address on record. Per FERPA and the Himdag, I will not give grades over the phone and am strongly discouraged from emailing same. (Again, see *t-pik elida* above.)

DISCLAIMER: This syllabus is designed to evolve and change throughout the semester based on class progress and interests. You will be notified of any changes as they occur.
