



Basic Statistics & Probability

3 Credits
ENGR 169
Spring 2020

Instructor: Harry S. Whiting II, Email: hwhiting@navajotech.edu
PE

Office Information: **Tech 323** Office Phone: (505)786-4163
Home or Cell: N/A

Class Location: Tech Building 325

Meeting Times: Monday and Wednesday 1230-1350 (12:30 AM – 1:50 PM)

Required Materials:

Text: Applied Statistics and Probability for Engineers & Scientists: Montgomery & Runger 6th Edition ISBN-13 9781118539712 (Price \$XXX.00)

Tools: Calculator, Jump drive & access to Excel.

Lab Fee: None

Course Description:

This course will introduce students to Descriptive Statistics, presentation of Statistical Data and the field of Probability. Probability will include manipulation of probability and conditional probabilities. Discrete distributions, Continuous distributions and Joint probability will also be covered.

Course Objectives:

- 1) Students will be able to determine permutations and combinations of a sample space and associated probabilities.
- 2) Students will be able to assess conditional probabilities for dependent and independent events.
- 3) Students will be able to use probability functions and cumulative probability functions of discrete and continuous variables to compute distribution parameters (Expected value and variance).

- 4) Students will be able to use tables to assess probability for Normal, student or chi squared distributions.
- 5) Students will be able to present statistical data.
- 6) Students will be able to create Histograms and other statistical charts.

COURSE OUTCOMES	COURSE MEASUREMENTS
The student will be able to collect data and to use tools to create analysis of data based on data gathered or provided.	Assessment will be by problems presented in homework, quizzes & tests.
Students will know methods of presentation of statistical data.	Assessment will be by problems presented in homework, quizzes & tests.
An ability to apply knowledge of mathematics to be able to calculate probabilities.	Assessment will be by problems presented in homework, quizzes & tests.
Students will be able to understand joint distributions.	Assessment will be by problems presented in homework or projects.
Students will be able to manipulate multiple probabilities and conditional probabilities.	Assessment will be by problems presented in homework, quizzes & tests.

Grading Plan:

Homework	20%
Attendance & participation	10%
Weekly quizzes	20%
Midterm	20%
Final	20%
Project	10%
Total	100%
Portfolio (Extra Credit)	+%

(A) 90-100; (B) 80-89; (C) 70-79; (D) 60-69; (F) 0-59

Week	Date	Chapters	Assignments	Quizzes
1	1/22			Quiz #1
	1/24	Last day to add/drop		
2	1/27-29		HW #1	Quiz #2

3	2/3-5		HW #2	Quiz #3
4	2/10-12		HW #3	Quiz #4
5			HW #4	Quiz #5
6	2/19		HW #5	Quiz #6
7	2/24-26		HW #6	Quiz #7
	2/28	Graduation Petition is due		
		Last day to withdraw with a “W”		
8	3/2-4		HW #7	Quiz #8
9	3/9	Midterm Review		
	3/11		Midterm	
10	3/23-25		HW #8	Quiz #9
11	3/30 & 4/1		HW #9	Quiz #10
12	4/6-8		HW #10	Quiz #11
13	4/13-15		HW #11	Quiz #12
14	4/20-22		HW #12	Quiz #13
15	4/27-29		HW #13	Quiz #14
16	5/4	Project Presentation	HW #14?	
	5/6	FINAL REVIEW		Quiz #15?
17	5/11	Final		

Grading Notes:

Homework will be assigned weekly and graded on a scale of 1-10. The top ten scoring homework assignments as turned in by the student will be used in calculating the final grade. Homework is due one week after assignment for full credit, may still be

turned in the next week for 75% credit and no credit thereafter. Homework will be computer print outs when possible. Weekly quizzes will be given at the beginning of the Thursday class and graded on a scale of 1-10. The top ten quiz grades will be used in calculating final grades. Students who miss quizzes or tests will not be allowed a makeup (unless a legitimate written excuse is provided) and Midterm and Final grades will be curved according to raising the highest objective grade in class to a '100' with all other student grades raised by the same number of points **only if there are six or more students in the class**. Attendance & participation will be graded based on the student's arrival on time and further predicated on a student's questions or answers in class (two required per class period). **Students with three unexcused absences are subject to being dropped.**

Projects must be completed to pass the class; those not finishing and presenting class projects will be given an incomplete or an 'F' depending on grade points.

Course Policies:

Please turn off Cell Phones during lectures. Please, be courteous to others around you and treat each other with professionalism. Feel free to work together to help others with their questions on homework. **Quizzes, Midterms and Finals should be done without help or input from others.**

We will be using the Moodle on line environment as well as other online tools to conduct the course, if possible.

Attendance Policy:

You are expected to attend every class session and participate. Your job or employment is as a student. If you are absent, it is your responsibility to complete missed assignments. Attendance will account for 10% of the final grade. If you know you will miss class, contact the Instructor; absence will only be forgiven with adequate excuse. **Students can be dropped if they exceed three (3) absences.**

Academic Integrity:

Integrity (honesty) is expected of every student in all academic work and every engineer and scientist working professionally. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who engage in academic dishonesty diminish their education and bring discredit to the college community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain

additional credit in the same class unless approved in advance by the instructor or failure to observe rules of academic integrity established by the instructor.

Diné Philosophy of Learning:

From the culture of the proud people of this land, derived from the wisdom of generations, the Dine” philosophy of learning is expressed through these words: nitsahakees-thinking, your increased skills, nahata-planning to meet these goals, iina-implement the work required to learn, practice your new skills, sihasin-evaluate your skills, use them. Each exercise includes these processes of THINKING, PLANNING, IMPLEMENTING, and REFLECTION.

Students with Disabilities:

The Navajo Technical College and the Industrial Engineering Program are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability, or needs special accommodations should inform the instructor privately of such so that accommodations arrangement can be made. Students who need an accommodation should also contact the Vocational Rehabilitation Counselor, Virginia Edgewater, whose phone number is (505) 786-4138.