North Central State College

MASTER SYLLABUS	2025-2026

A.   <u>Academic Division</u>: Liberal Arts

B.   <u>Discipline</u>: Statistics

C.   <u>Course Number and Title</u>: STAT1010 Probability and Statistics

D.   <u>Assistant Dean</u>: Laura Irmer

E.   <u>Credit Hours</u>: 3

F.   <u>Prerequisites</u>:   MATH0084 (Minimum grade of C- required) or qualifying placement test score
          OR
          <u>Co-requisites</u>:   STAT 0086

G.   <u>Last Course/Curriculum Revision Date</u>: Fall 2023   Origin date: 06/08/2011

H.   <u>Textbook(s) Title</u>:

   OpenStax Free Textbook (available for download or view)
   Introductory Statistics
   - Authors: OpenStax College
   - Copyright Year: 2018
   - Edition: N/A
   - Link: https://openstax.org/details/books/introductory-statistics

   <u>Online/Hybrid Courses</u>:
   Online Access Code thru Web Assign (E-book included)
   - Author: OpenStax
   - ISBN 9781337777186

I.   <u>Workbook(s) and/or Lab Manual</u>: Access to Microsoft Excel; TI-83 or TI-84 calculator required

J.   <u>Course Description</u>: This course provides the student with an overview of probability and statistics. Probability terminology, concepts and rules are emphasized in solving probability problems. Descriptive statistics, including measures of central tendency and dispersion, charts, tables and diagrams are used to summarize data. The student is introduced to the binomial, Poisson, hyper-geometric, normal and t-distributions. Confidence intervals, hypothesis testing, correlation, and linear regression are used to make conclusions concerning population parameters from sample data. This course meets the requirements for Transfer 36 Introductory Statistics TMM010.

K.   College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	Quantitative Literacy VALUE Rubric, middle of term.

L.   Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Define foundational terms used in statistics and identify characteristics of a well-designed statistical study.	HW, Project, Tests, final exam, early in the term.
2. Collect, organize, and summarize data in tables, charts, and with statistics/parameters.	HW, Project, Tests, final exam Early in the term.
3. Describe the relationship between two variables both visually and numerically.	HW, Project, Tests, final exam Early in the term.
4. Apply the rules and concepts of probability to solve a variety of problems.	HW, Tests, final exam Middle of the term.
5. Apply the binomial, poison, and hyper-geometric discrete probability distributions to solve appropriate statistical problems.	HW, Tests, final exam Middle of the term.
6. Apply the normal distribution to solve appropriate statistical problems.	HW, Tests, final exam Late in the term.
7. Define sampling distributions and generate said distributions to observe the Central Limit Theorem.	HW, Project, Tests, final exam Late in the term.
8. Calculate confidence intervals for means and proportions using the z and t distributions.	HW, Project, Tests, final exam Late in the term.
9. Compute one population tests for means and proportions using the z and t distributions.	HW, Project, Tests, final exam Late in the term.

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at:
https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDF/14-081b.pdf

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North Central State College
SYLLABUS ADDENDUM

Academic Division:	Liberal Arts	**Discipline:**	Mathematics
Course Coordinator:	Sara K. Rollo		
Course Number:	STAT 1010-Section CN3	**Course Title:**	Probability and Statistics
Semester / Session:	Spring AB 2026	**Start / End Date:**	January 12th to May 8th

Instructor Information

Name:	Pamula (Pam) Robison	**Phone Number:**	419-755-4525
Email:	probison@ncstatecollege.edu	**Credentials:**	BA Mathematics / MS Applied Mathematics
	https://ncsc.zoom.us/j/856970747?pwd=UE1JNC9WNjhPM3dkRCs3bjE0SGx3Zz09 Or in KEHOE 134 or Health Science		Mondays & Wednesdays 1:30 – 2:30pm KH Tuesdays 1:00 – 2:00pm HS Thursdays 1:00 – 2:00pm HS
Office Location:	336	**Office Hours:**	Thursdays 6:00 – 7:00pm Online

I. Topical Timeline (Subject to Change):

Weeks	Topics
Weeks 1-2 January 12th – 22nd	Overview of statistics Sampling methods.
Week 3 January 26th – 30th	Types of data. Frequency distributions. Graphical representations.
Weeks 3-4 January 26th – February 6th	Measures of central tendency. Measures of dispersion.
Week 4 February 2nd – 6th	Scatter diagrams and correlation. Least squares linear regression.
Weeks 4-6 February 2nd – 20th	Counting Techniques. Probability rules.
Weeks 6-8 February 16th – March 6th	Discrete probability functions: Binomial, Poisson, Hyper-Geometric (counting techniques)
Week 9 March 16th – 20th	Normal probability distribution.
Week 10 March 23rd – 27th	T-distribution. Sampling distributions.
Weeks 11-13 March 30th – April 17th	Confidence intervals for means and proportions.
Weeks 13-16 April 13th – May 8th	Hypothesis testing (one population) of means and proportions.

II. Course Assignments:
Chapters covered --- 1, 2, 12, 3, 4, 5, 6, 7, 8, 9

1. Quizzes
2. Tests
3. Homework
4. Final Project
5. Final Exam

III.   Grading and Testing Guidelines:

Activity	Number of Items	Points per Item	Total Points	Percentage
Homework	10	7	70 pts	7%
Project	1	150	150 pts	15%
Quiz	1	100	100 pts	10%
Review Packets	3	7	21 pts	2.1%
Tests	3	150	450 pts	45%
Final Review Packet	1	9	9 pts	0.9%
Final Exam	1	200	200 pts	20%
Totals			1000 pts	100%

1.   Homework: 10%
2.   Project: 15%
3.   Tests/Quizzes: 55% (Recommended to use either 45%/10% or 50%/5%)
4.   Final Exam 20%

IV.   Examination Policy:

The three tests and one quiz in this course are not cumulative; they cover only the material preceding the previous test. The final exam is cumulative. Because this is a fast-paced course, getting behind is something to avoid at all costs. However, I do understand that emergencies can come up, so you may have the opportunity to make up *one* exam up to one week after it was originally given, if you provide a sufficient document as to why you missed. You may not miss the Final Exam without documentation of an unavoidable circumstance. If you know ahead of time that you are going to have to miss an exam, please see me so that we can make an arrangement.

V.   Class Attendance and Homework Make-Up Policy:

I take attendance each day. Although it is not a grade, your lack of attendance will affect your performance in this course, and good attendance is critical to your success in this course. This course is an investment in your future, and you only get out of it what you have put into it, so make it worth your while by being here.

I have set up homework for each section on Cengage. The due dates will fall on the class day after we have covered the Chapter in its entirety in class. Each Chapter homework is worth 7 points and will be graded based on the percentage correct for each assignment. I will calculate the grade by multiplying the percentage by 7, and round to the nearest whole number. If you are struggling, or late with your work, I can grant an extension if you request it.

The three reviews will be handouts in class. We will go over them as time allows, but they will be graded for completion and accuracy on each test day (including the last day). I write them up as study guides, so every effort should be made to have them not only complete but correct. The first three reviews are worth 7 points. The final review is worth 9 points. These are expected to be worked on before review day, to make the review time in class productive. Once again, the reviews are study guides, and it is unwise to take a test without studying first, so make the reviews a priority.

There is one project for this course, but it is broken into 5 segments. Each part will be submitted online. I expect you to turn it in as an evolving paper, meaning that when you turn in part 2 of the project, the paper will contain part 1 followed by part 2. When you turn in part 3 of the project, it will be a continuation of the first two parts, with the third on the same document, just following the first two, and so forth. I will expect you to make revisions as needed to improve the document as we go. This project will require you to create some graphs. I expect these and all the project to be typed, not written by hand. Please visit the tutors if you need some guidance on how to create these documents.

My policy on late work is that I will accept up to FIVE assignments late without docking points, up to the last class of Week 14. This includes parts of the project, any homework online, and review packets. Understand that I do not want you to just wait until the end of the semester to turn all your work in. I am expecting you to behave like responsible adults and to try

your best to turn in everything on time. However, I understand that life circumstances can sometimes get in the way, and I want to offer you grace rather than punishment. Understand that there are natural consequences to not getting your work done on time, such as you have given yourself more work to do in a shorter period of time (other assignments will be coming along), you will not be as prepared for the next chapter or next Review or Test. Also, when you turn your work in late, you are giving me more work to do at a time when I wasn't expecting to grade certain assignments.

Finally, in the same spirit that I am offering you a chance to turn in work late (without docking points), I am expecting you to be forgiving of me if I run behind on something or forget something. I will try to correct any mistakes I make as soon as possible. My goal is to respond to emails and messages within 48 hours and to have work graded within one week of it being collected.

VI.   **Classroom Expectations:**

To respect the rights of all members of the class to hear what is going on and to not be distracted, please:
- Arrive on time.
- Keep personal and private conversations to a minimum. Good communication and listening require that only one person be speaking at a time.
- No attention paid to your cell phone during class unless using if specifically for class purposes.
- Disable all audible signals from cell phones, pagers, etc. for the duration of the class session. If you need to have your phone turned on for work or an emergency, set it to vibrate. Absolutely no electronics (other than your graphing calculator) are to be accessed during testing.
- Everyone should have the opportunity to participate in the discussion and ask questions.

Bring your graphing calculator to class each and every day. If you choose to purchase a calculator other than what is required for this course, you are responsible for learning how to use it. If you choose not to purchase one, you are responsible for learning how to do the work without the aid of the graphing calculator.

STAT 1010	Day 1	Day 2
Week 1 Monday, January 12th Wednesday, January 14th	**Happening in Class:** Introduction to Course 1.1 Definitions of Statistics, Probability and Key Terms	**Happening in Class:** 1.2 Data, Sampling, and Variation in Data and Sampling
Week 2 Monday, January 19th Wednesday, January 21st	**NO CLASS** **Martin Luther King Jr Day!**	**Happening in Class:** 1.3 Frequency, Frequency Tables, and Levels of Measurement 1.4 Experimental Design and Ethics
Week 3 Monday, January 26th Wednesday, January 28th	**Happening in Class:** 2.1 Stem-and-Leaf Graphs, Line Graphs, and Bar Graphs 2.2 Histograms, Frequency Polygons, and Time Series **Complete Assignment:** Chapter 1 Homework due (WebAssign)	**Happening in Class:** 2.3 Measures of the Location of the Data 2.4 Box Plots
Week 4 Monday, February 2nd Wednesday, February 4th	**Complete in Class:** Quiz over Chapter 1 and Sections 2.1 and 2.2.	**Happening in Class:** 2.5 Measures of the Center of Data 2.6 Skewness and the Mean, Median, and Mode 2.7 Measures of the Spread of Data **Complete Assignment:** Project Part 1 (Canvas)
Week 5 Monday, February 9th Wednesday, February 11th	**Happening in Class:** 2.7 Measures of the Spread of Data 12.1 Linear Equations 12.2 Scatter Plots	**Happening in Class:** 12.3 The Regression Equation 12.4 Testing the Significance of the Correlation Coefficient 12.5 Prediction **Complete Assignment:** Chapter 2 Homework due (WebAssign)
Week 6 Monday, February 16th Wednesday, February 18th	**Happening in Class:** Go over Review 1: Chapters 1, 2 & 12 **Complete Assignment:** Chapter 12 HW due (WebAssign)	**Complete in Class:** Test 1 over Chapters 1, 2 & 12 Turn in Review 1 Packet

Week 7 Monday, February 23rd Wednesday, February 25th	**Happening in Class:** 3.1 Terminology of Probability 3.2 Independent and Mutually Exclusive Events **Complete Assginment:** Project Part 2 (Canvas)	**Happening in Class:** 3.3 Two Basic Rules of Probability 3.4 Contingency Tables 3.5 Tree and Venn Diagrams

Week 8
Monday, March 2nd
Wednesday, March 4th
	Happening in Class:
	4.1 Probability Distribution Function
	    for a Discrete Random Variable
	4.2 Mean or Expected Value and Stand.
	    Dev. for a Discrete Rand. Var.
	4.3 Binomial Distribution
	Complete Assignment:
	Chapter 3 HW due (WebAssign)
		Happening in Class:
		4.4 Geometric Distribution
		4.5 Hypergeometric Distribution
		4.6 Poisson Distribution
		Complete Assignment:
		Project Part 3 (Canvas)

Spring Break Monday, March 9th Wednesday, March 11th	NO CLASS	NO CLASS
Week 9 Monday, March 16th Wednesday, March 18th	**Happening in Class:** 5.1 Continuous Probability Function 5.2 The Uniform Distribution 5.3 The Exponential Distribution **Complete Assignment:** Chapter 4 HW due (WebAssign)	**Happening in Class:** 5.3 The Exponential Distribution 6.1 The Normal Distribution 6.2 Using the Normal Distribution
Week 10 Monday, March 23rd Wednesday, March 25th	**Happening in Class:** 6.1 The Normal Distribution 6.2 Using the Normal Distribution **Complete Assignment:** Chapter 5 HW due (WebAssign)	**Happening in Class:** Go over Review 2: Chapters 3, 4, 5 & 6 **Complete Assignment:** Chapter 6 HW due (WebAssign)

Week 11
Monday, March 30th
Wednesday, April 1st
	Complete in Class:
	Test 2 over Chapters 3, 4, 5 & 6
	Turn in Review 2 Packet
		Happening in Class:
		7.1 The Central Limit Theorem for
		    Sample Means
		7.2 The Central Limit Theorem for
		    Sums
		7.3 Using the Central Limit Theorem

Week 12
Monday, April 6th
Wednesday, April 8th
	Happening in Class:
	7.2 The Central Limit Theorem for
	    Sums
	7.3 Using the Central Limit Theorem
	8.1 A Single Population Mean using the
	    Normal Distribution
		Happening in Class:
		8.1 A Single Population Mean using the
		    Normal Distribution
		8.2 A Single Population Mean using the
		    Student t-Distribution
		8.3 Confidence Interval about a
		    Population Proportion
		Complete Assignment:
		Chapter 7 HW due (WebAssign)

Week 13
Monday, April 13th
Wednesday, April 15th
	Happening in Class:
	9.1 Null and Alternative Hypotheses
	9.2 Outcomes and the Type I and Type
	    II Errors
	9.3 – 9.5 Hypothesis Tests for a
	    Population Mean
	Complete Assignment:
	Chapter 8 HW due (WebAssign)
		Happening in Class:
		9.3 – 9.5 Hypothesis Tests for a
		    Population Mean
		Complete Assignment:
		Project Part 4 (Canvas)

Week 14 Monday, April 20th Wednesday, April 22nd	**Happening in Class:** 9.3 – 9.5 Hypothesis Tests for a Population Proportion	**Happening in Class:** Go over Review 3: Chapters 7, 8 & 9 **Complete Assignment:** Chapter 9 HW due (WebAssign)
Week 15 Monday, April 27th Wednesday, April 29th	**Complete in Class:** Take Test 3 over Topics 7, 8 & 9 Turn in Review 3 Packet	**Happening in Class:** Go over Final Review Packet **Complete Assignment:** Project Part 5 (Canvas)
Week 16 Monday, May 4th Wednesday, May 6th	**Happening in Class:** Go over Final Review Packet	**Complete in Class:** Final Exam Turn in Final Review Packet