North Central State College

MASTER SYLLABUS	2025-2026

A. Academic Division: Liberal Arts

B. Discipline: Mathematics

C. Course Number and Title: STAT 1040 Statistics for Business Analytics

D. Assistant Dean: Laura Irmer

E. Credit Hours: 3

F. Prerequisites: STAT 1010 (Minimum grade of C- required)

G. Last Course/Curriculum Revision Date: Fall 2023 Origin date: 02/02/2021

H. Textbook(s) Title:

Statistics for Business and Economics
- Author: James McClave, Paul Benson and Terry Sincich
- Copyright Year: 2022
- Edition: 14th
- ISBN: 9780137342105 (18-week access, standalone code)

I. Workbook(s) and/or Lab Manual: Supplies: A TI-84/83 Calculator and access to Excel is required

J. Course Description:

Statistical inferences including estimation, confidence intervals, and tests of hypotheses for means, standard deviations, and proportions: analysis of variance; regression analysis; chi-square; business applications. Students will develop a basic competency in using a computer spreadsheet and/or the graphing calculator to perform statistical calculations.

K. College Wide Learning Outcomes:

College-Wide Learning Outcomes	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

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. Infer appropriate conclusions to tests of hypotheses for two samples by comparing means, proportions and variances including calculating the test statistics for z-tests, t-tests and F-tests.	Homework, chapter activity, chapter test (beginning of the term) and final exam (end of term)
2. Demonstrate an understanding of how properly to design an experiment and when to conduct an analysis of variance (ANOVA).	Homework, discussion post, chapter test (middle of term) and final exam (end of term)
3. Construct appropriate tables, determine probabilities using both one-way and two-way (contingency) tables, and calculate the test statistic for Chi-Square tests.	Homework, chapter activity, chapter test and final exam (2nd half of term)
4. Calculate linear regression equations, coefficient of correlation and determination, and use the regression equation for estimation and prediction.	Homework, discussion post, chapter test and final exam (2nd half of term)
5. Estimate parameters for multiple regression models and use said models to make predictions	Homework, chapter activity, and final exam (2nd half of 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

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Liberal Arts	**Discipline:**	Mathematics
Course Coordinator:	Sara K. Rollo		
Course Number:	STAT 1040 - 920	**Course Title:**	Statistics for Business Analytics
Semester / Session:	Fall 2025 – B session	**Start / End Date:**	10.13 – 12.12

Instructor Information

Name:	Sara K Rollo	**Phone Number:**	419.755.4833
Credentials	MS Applied Mathematics	**E-Mail Address:**	srollo@ncstatecollege.edu
Office Location:	Zoom	**Office Hours:**	Friday (zoom) – 7 am – 9 am

I. Topical Timeline (Subject to Change):

STAT 1040	Wednesday	Saturday
Media Assignment Note- Completed through Pearson as a preparatory assignment for the chapter's homework	**Chapter Activity Note –** Completed via word or excel (for example) and submitted through appropriate assignment in Canvas	**Test Review Note –** Provides problems intended to help in preparing for the chapter's test and is completed through Pearson
1 10.13 – 10.19	**Complete Assignments:** Ch 8 Media, Ch 8 Sections 2 and 3 HW Due **Outcomes/objectives:** Identify target parameter and compare two population means using independent sampling	**Complete Assignments:** Ch 8 Sections 4 and 6 HW and Ch 8 Activity Due **Outcomes/objectives:** Compare two population means using paired difference experiments, compare two population proportions and variances using independent sampling
2 10.20 – 10.26	**Complete Assignments:** Ch 8 Test Review and Ch 8 Test Due	**Complete Assignments:** Ch 9 Media, Ch 9 Sections 1 and 2 HW Due **Outcomes/objectives:** Learn the elements of a designed experiment and the completely randomized design of single factor
3 10.27 – 11.2	**Complete Assignments:** Ch 9 Sections 3 and 5 HW, Discussion Post Due **Outcomes/objectives:** Perform multiple comparison of means and factorial experiments of two factors	**Complete Assignments:** Ch 9 Test Review and Test Due
4 11.3 – 11.9	**Complete Assignments:** Ch 10 Media, Ch 10 HW Due **Outcomes/objectives:** Use categorical data and the multinomial experiment, test category probabilities with both one-way and two-way tables and learn of a caution of chi-square tests	**Complete Assignments:** Ch 10 Activity, Test Review and Test Due
5 11.10 – 11.16	**Complete Assignments:** Ch 11 Media, Ch 11 Sections 1 and 2 HW Due **Outcomes/objectives:**	**Complete Assignment:** Ch 11 Sections 3 and 4 HW Due **Outcomes/objectives:** Model various assumptions, and assess

	Use probabilistic models, and fit the model using the Least Square Approach	the utility of the model by making inferences about the slope
6 11.17 – 11.23	**Complete Assignments:** Ch 11 Sections 5 and 6 HW, Discussion Post Due **Outcomes/objectives:** Find the coefficients of correlation and determination and use the model for estimation and prediction	**Complete Assignments:** Ch 11 Test Review and Test Due
7 11.24 – 11.30	**Complete Assignments:** Ch 12 Media, Ch 12 Sections 3 and 4 HW Due **Outcomes/objectives:** Find multiple regression models, estimate and make inferences about the beta parameters, evaluate overall model utility and use the model for estimation and prediction	**Complete Assignments:** Ch 12 Sections 7 and 8 HW Due **Outcomes/objectives:** Learn and use qualitative (dummy) variable models, models with both quantitative and qualitative variables and perform residual analysis: checking the regression assumptions
8 12.1-12.12 **(NOTE – last day of the term is 12.12**	**Complete Assignments:** Ch 12 Test Review and Test Due	**Complete Assignments :** Final Exam Test Review and Final Exam Due

II. Course Assignments (subject to change): *NOTE* Please utilize the "using technology" at the end of each chapter as it shows the processes for Excel and for the TI-83/84 Graphing Calculator

1. Homework
2. Media Assignment – to be completed through online component outside of class time
3. Study Plan – to be completed through online component and required to complete before each test outside of class time
4. Chapter Activity – Located at the end of the indicated chapter. For example, activity 8.1, is at the end of chapter 8
5. Statistics in Action Discussion Post (at the beginning of the indicated chapter) – Form groups of 3 or 4 students. Each student will write two (2) questions for the other group members to answer. Then each of the other group members will answer one of the two questions. The question writer will respond to each of the other students' answers indicating if the student is correct or providing an explanation for the student's answer. Each student is graded on the two questions they formulate and the response they provide to the students' answers of their questions. Students are not being graded on the answer they provide to the question writer. At any point during the discussion, please reach out to the instructor with any questions.
6. Chapter Tests
7. Comprehensive Final Exam

III. Grading and Testing Guidelines:

Activity	Qty	Points	Percentage
Homework (25 points each)	10	250	10%
Media Assignments & Test Reviews (10 points each)	11	110	10%
Tests (100 points each)	5	500	50%
Chapter Activities (20 points and 15 points)	2	25	10%
Final Exam		200	20%
Total		1085	100%

IV. Examination Policy:

- Complete via Pearson's My Stat Lab by indicated due date
- Due dates are both on My Stat Lab and on Canvas
- All tests are open on the first day of the semester and will close by the indicated due date and time
- You have one attempt per question and a time limit

- You must complete the chapter's study plan prior to taking the chapter's test
- If you want me to review answers for formatting or other errors, then reach out after you complete the test

V. Class Attendance and Homework Make-Up Policy:

- Homework is to be completed using the online component of the course, Pearson's My Stat Lab
- Homework should be completed by the indicated due date
- Due dates are both on My Stat Lab and on Canvas
- There is no time limit for homework
- You have multiple attempts for each homework question. If you do not get the right answer within 3 tries, then select similar question and attempt again. You can continue this cycle until you get the right answer
- All homework is available on the first day of the semester but will close by the indicated due date and time
- Complete the reflection assignments – these are completed through Canvas
- Complete the Chapter activity assignment – the instructions are on Canvas and you submit via Canvas

VI. Classroom Expectations:

- If you post a message/discussion/comment, then please be respectful to your classmates and to me.
- You are expected to complete the assignments by the indicated due dates.
- You can expect a turn- around time for both grades (for assignments completed on time) and communication to be within 24 hours
- The assignments move quickly. Be sure to write due dates and to stay organized.
- Ask Questions Often!
- Zoom room: https://ncsc.zoom.us/j/95189210747 Passcode: 693271
- Any student who requires reasonable accommodations related to a disability should inform the course instructor and the Coordinator of Specialized Services (Room 138 in Kee Hall; phone 419-755-4727)
- Students who encounter difficulty in any of their courses are encouraged to visit the Tutoring Resource Center (Room 119 in Fallerius Technical Education Center) for tutoring assistance, and the Student Success Center (Room 136 in Kee Hall) for academic assistance, advising services, referrals for personal counseling and Learning Disability (LD) Testing.