2020

Methods in Business Analysis

North Carolina Agricultural and Technical State University

NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY

COURSE SYLLABUS

College Name: College of Business and Economics

Department Name: Department of Business Information Systems and Analytics

Course Name: Methods in Business Analysis

COURSE INFORMATION

- Course Number/Section: BUAN 605
- Term:
- Semester Credit Hours: 3
- Times and Days:
- Class Location:

INSTRUCTOR CONTACT INFORMATION

- Instructor:
- Office Location:
- Office Phone:
- Email Address:

Faculty must notify students of the approximate time and method they can expect to receive an answer to all communications (e.g., email, phone, course messages). Excluding holidays, the response should be provided within 48 hours.

If there's a graduate teaching assistant assigned to work with this course, please include their names also.

STUDENT HOURS

These are times students may visit the professor without an appointment to request the assistance they need.

NOTE: Students are responsible for reading, understanding, and following the syllabus.

: AM ☐ / PM ☐ – : AM ☐ / PM ☐

Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐

COURSE PREREQUISITES

Students admitted provisionally to the MBA are required to complete foundation courses with grades of "B" or above in the first nine hours of graduate work. Please note that with the new grading scale a grade of "B-" is not a "B".

COURSE DESCRIPTION

This course focuses on building an understanding of mathematical analysis techniques necessary to solve complex business problems from a wide range of business areas, including inventory, customer service, sales and quality management. Basic statistical concepts and statistical process improvement are covered. Students will use a variety of computer software packages including Microsoft Excel and PHStat.

STUDENT LEARNING OBJECTIVES/OUTCOMES (SLO)

Learning outcomes should be specific, measurable, and focused on the content knowledge the students are expected to master and not what the faculty will teach.

If the course is a General Education Course, the SLO should be listed and labeled as "General Education."

SLO 1: Develop critical thinking skills.
SLO 2: Identify and apply appropriate statistical techniques.
SLO 3: Develop both oral and written communications skills.
SLO 4: Students will learn to

a. Identify appropriate statistical analysis methods for given data sets;
b. Construct statistical analysis using Microsoft Excel;
c. Interpret statistical models
d. Present models and solutions in both oral and written form.

REQUIRED TEXTBOOKS AND MATERIALS

Any course-level subscriptions and tools linked in Blackboard Learn learning management system (LMS) should be listed here. The Blackboard LMS must have links to their student data privacy statement.

REQUIRED TEXTS:

Levine, Stephan, and Szabat, *Statistics for Managers using Microsoft Excel*, 8th Edition. Pearson Prentice Hall, 2017 – you must purchase the online versión with My Stat Lab (to get access to Chapter 18) and access to PHStat software. It is your choice whether to use a print copy of the text or the online version.

REQUIRED MATERIALS:

1. It is expected that you have an understanding of technology and can solve problems on your own.
2. You will need access to Microsoft Office – Word, Excel and Outlook. This software is provided through the university.
3. You will need access to a computer (not a Tablet or phone) with a webcam. We may use Respondus Lockdown Browser with Monitoring for quizzes and tests. It is your responsibility to ensure that you have access to the correct technology.
4. Reliable Internet access.

5. Calculator.

SUGGESTED COURSE MATERIALS

SUGGESTED READINGS/TEXTS:

SUGGESTED MATERIALS:

GRADING POLICY

ASSIGNMENTS AND GRADING POLICY

94% and above	A		76% - 74%	C
93% - 90%	A-		73% - 70%	C-
89% - 87%	B+		69% - 67%	D+
86% - 84%	B		66% - 64%	D
83% - 80%	B-		63% - 0%	F
79% - 77%	C+			

For GRADUATE COURSES: See 2019-2020 Graduate Catalog p.38 for graduate grading scale and Non-Graded Courses

GRADING ALLOCATION

Course grades are based on a weighted grading scale of 100%. The breakdown for the course is as follows: *[Faculty, please adjust according to your course.]*

Category	# of Activities	Percentage Grade Weight
Exam 1	1	16.67%
Exam 2	1	16.67%
Exam 3	1	16.67%
Assignments	10+2 extra credit	25%
Discussion Forum Participation	10 + 1 (self-introduction not graded)	25%
Total	**26**	**100%**

COURSE POLICIES

USE OF BLACKBOARD AS THE LEARNING MANAGEMENT SYSTEM

Blackboard is the primary online instructional and course communications platform. Students can access the course syllabus, assignments, grades, and learner support resources. Students are encouraged to protect their login credentials, complete a Blackboard orientation, and log in daily to the course.

Note: Uploading assignments through Blackboard presents a challenge for Chromebook users in locating the files for submission. If you use a Chromebook, please be sure you also have access to a Mac computer or Windows computer so you can fully participate in your Blackboard class. For more information about student computer recommendations, please visit https://hub.ncat.edu/administration/its/computer-recommendations.php.

MAKE-UP EXAMS

See << Update Academic Year >>*Undergraduate Bulletin:*

https://www.ncat.edu/provost/academic-affairs/bulletins/index.php

For GRADUATE STUDENTS: See 2019-20 Graduate Catalog p. 54

EXTRA CREDIT

LATE WORK

SPECIAL ASSIGNMENTS

For GRADUATE STUDENTS: FAILING TO MEET COURSE REQUIREMENTS (Graduate Catalog p.40)

For GRADUATE STUDENTS: CLASS ATTENDANCE (see 2019-20 Graduate Catalog p. 53-54)

Students are expected to attend class and participate on a regular basis in order to successfully achieve course learning outcomes and meet federal financial aid requirements (34 CFR 668.22). Class attendance in online courses is defined as active participation in academically-related course activities. Active participation may consist of course interactions with the content, classmates, and/or the instructor. Examples of academically-related course activities include, but are not limited to:

- Completing and submitting assignments, quizzes, exams, and other activities within Blackboard or through Blackboard (3rd-party products).
- Participating in course-related synchronous online chats, discussions, or meeting platforms such as Blackboard Collaborate in which participation is tracked.

CLASSROOM CITIZENSHIP

Courtesy, civility, and respect must be the hallmark of your interactions.

COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT

North Carolina A&T State University is committed to following the requirements of the Americans with Disabilities Act Amendments Act (ADAAA) and Section 504 of the Rehabilitation Act.
If you need an academic accommodation based on the impact of a disability, you must initiate the request with the Office of Accessibility Resources (OARS) and provide documentation in accordance with the Documentation Guidelines at N.C. A&T. Once documentation is received, it will be reviewed. Once approved, you must attend a comprehensive meeting to receive appropriate and reasonable accommodations. If you are a student registered with OARS, you must complete the Accommodation Request Form to have accommodations sent to faculty.

OARS is located in Murphy Hall, Suite 01 and can be reached at 336-334-7765, or by email at accessibilityresources@ncat.edu. Additional information and forms can be found on the internet at https://www.ncat.edu/provost/academic-affairs/accessibility-resources/index.php.

Please note: Accommodations are not retroactive and begin once the Disability Verification Form is provided to faculty.

TITLE IX

North Carolina A&T State University is committed to providing a safe learning environment for all students—free of all forms of discrimination and harassment. Sexual misconduct and relationship violence in any form are inconsistent with the university's mission and core values, violates university policies, and may also violate federal and state law. Faculty members are considered "Responsible Employees" and are required to report incidents of sexual misconduct and relationship violence to the Title IX Coordinator. If you or someone you know has been impacted by sexual harassment, sexual assault, dating or domestic violence, or stalking, please visit the Title IX website to access information about university support and resources. If you would like to speak with someone confidentially, please contact Counseling Services at 336-334-7727 or the Student Health Center at 336-334-7880.

TECHNICAL SUPPORT

If you experience any problems with your A&T account, you may call Client Technology Services (formerly Aggie Tech Support and Help Desk) at 336-334-7195, or visit https://hub.ncat.edu/administration/its/dept/ats/index.php.

FIELD TRIP POLICIES / OFF-CAMPUS INSTRUCTION AND COURSE ACTIVITIES

If applicable:

Off-campus, out-of-state, foreign instruction, and activities are subject to state law and university policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at https://www.ncat.edu/campus-life/student-affairs/index.php.

STUDENT HANDBOOK

https://www.ncat.edu/campus-life/student-affairs/departments/dean-of-students/student-handbook.php

STUDENT TRAVEL PROCEDURES AND STUDENT TRAVEL ACTIVITY WAIVER

https://hub.ncat.edu/administration/student-affairs/staff-resources/studen_activity_travel_waiver.pdf

OTHER POLICIES *(e.g., Copyright Guidelines, Confidentiality, etc.)*

STUDENT HANDBOOK

https://www.ncat.edu/campus-life/student-affairs/departments/dean-of-students/student-handbook.php

Graduate Catalog

SEXUAL MISCONDUCT POLICY

https://www.ncat.edu/legal/title-ix/sexual-harassment-and-misconduct-policies/index.php

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

https://www.ncat.edu/registrar/ferpa.php

STUDENT COMPLAINT PROCEDURES

https://www.ncat.edu/current-students/student-complaint-form.php

STUDENT CONDUCT AND DISCIPLINE

North Carolina A&T State University has rules and regulations that govern student conduct and discipline meant to ensure the orderly and efficient conduct of the educational enterprise. It is the responsibility of each student to be knowledgeable about these rules and regulations.

Please consult the following about specific policies such as academic dishonesty, cell phones, change of grade, disability services, disruptive behavior, general class attendance, grade appeal, incomplete grades, make-up work, student grievance procedures, withdrawal, etc.:

- Undergraduate Bulletin
  https://www.ncat.edu/provost/academic-affairs/bulletins/index.php
- Graduate Catalog
  https://www.ncat.edu/tgc/graduate-catalog/index.php
- Student Handbook
  https://www.ncat.edu/campus-life/student-affairs/departments/dean-of-students/student-handbook.php

ACADEMIC DISHONESTY POLICY

Academic dishonesty includes but is not limited to the following:

1. Cheating or knowingly assisting another student in committing an act of cheating or other academic dishonesty;
2. Plagiarism (unauthorized use of another's words or ideas as one's own), which includes but is not limited to submitting exams, theses, reports, drawings, laboratory notes or other materials as one's own work when such work has been prepared by or copied from another person;
3. Unauthorized possession of exams or reserved library materials; destroying or hiding source, library or laboratory materials or experiments or any other similar actions;
4. Unauthorized changing of grades, or marking on an exam or in an instructor's grade book or such change of any grade record;
5. Aiding or abetting in the infraction of any of the provisions anticipated under the general standards of student conduct;
6. Hacking into a computer and gaining access to a test or answer key prior to the test being given. N.C. A&T reserves the right to search the emails and computers of any student suspected of such computer hacking (if a police report of the suspected hacking was submitted prior to the search); and
7. Assisting another student in violating any of the above rules.

A student who has committed an act of academic dishonesty has failed to meet a basic requirement of satisfactory academic performance. Thus, academic dishonesty is not only a basis

for disciplinary action, but may also affect the evaluation of a student's level of performance. Any student who commits an act of academic dishonesty is subject to disciplinary action.

In instances where a student has clearly been identified as having committed an act of academic dishonesty, an instructor may take appropriate disciplinary action, including loss of credit for an assignment, exam, or project; or awarding a grade of "F" for the course, **subject to review and endorsement by the chairperson and dean**.

For GRADUATE STUDENTS: Reference for academic dishonesty – 2010-2020 Graduate Catalog, p.58-59

For GRADUATE STUDENTS: STUDENT RELIGIOUS OBSERVANCE (see Graduate Catalog, p.55)

ASSIGNMENTS AND ACADEMIC CALENDAR

Include topics, reading assignments, due dates, exam dates, withdrawal dates, pre-registration and registration dates, all holidays, and convocations.*

THE WEEK OF MM/DD/YY	SUBJECT	UNIT LEARNING OUTCOMES (ULO)	READING IN TEXT, ACTIVITY, HOMEWORK, EXAM
	Unit 1: Introduction	ULO1: Acquire an overview of Excel and PHStat ULO2: Acquire textbook and university copy of Microsoft Office and PHStat.	1. **Complete:** Assignment #1 (ULO1-2) 2. **Complete:** Discussion #1 (ULO1-2)
	Unit 2: Defining, Organizing, and Visualizing Variables	ULO1: Explain the DCOVA framework used in this text (CLO 2) ULO2: Have an understanding of the importance of "big" data (CLO 2) ULO3: Explain the meaning of the term variable. (CLO 2) ULO4: Understand the four different measurement scales. (CLO 2) ULO5: Understand issues related to data preparation. (CLO 2) ULO6: Understand types of survey errors (CLO 2) ULO7: Understand how to use Excel to organize and visualize categorical and numerical variables. (CLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 2 2. **Complete:** Assignment # 2 (ULO1-7) 3. **Complete:** Discussion Board # 2 (ULO1-7)
	Unit 3: Numerical Descriptive Measures	ULO1: Compute and understand the difference between the measures for the central tendency (CLO 2) ULO2: Understand variation and compute measures for the range, variance, standard deviation and	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 3 2. **Complete:** Assignment # 3 (ULO1-5)

		the coefficient of variation (CLO 2) ULO3: Compute a Z-score (CLO 2) ULO4: Understand skewness and kurtosis as measures of the shape of a distribution (CLO 2) ULO5: Compute the covariance and coefficient of correlation (CLO 2)	3. **Complete:** Discussion Board # 3 (ULO1-5)
	Unit 4: Discrete Probability Distributions	ULO1: Distinguish between a discrete distribution and a continuous distribution (CLO 2) ULO2: Compute probabilities for a Binomial distribution (CLO 2) ULO3: Compute probabilities for a Poisson distribution (CLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 5 2. **Complete:** Assignment # 4 (ULO1-3) 3. **Complete:** Discussion Board # 4 (ULO1-3)
	Unit 5: Normal Distribution	ULO1: Understand the difference between a discrete distribution and a continuous distribution (CLO 2) ULO2: Compute probabilities for a Normal distribution (CLO 2) ULO3: Evaluate the normality of a dataset (CLO 2)	1. **Read:** Continuous Distribution Notes 2. **Complete:** Assignment # 5 (ULO1-3) 3. **Complete:** Discussion Board # 5 (ULO1-3)
	Unit 6: Exam 1		1. **Complete:** Exam 1
	Unit: 7 Sampling Distributions & Confidence Interval Estimation	ULO1: Understand the theoretical concept of a sampling distribution (CLO 2) ULO2: Compute probabilities using the sampling distribution of the mean. (CLO 2) ULO3: Compute probabilities using the sampling distribution of the proportion (CLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 7 & 8 2. **Complete:** Assignment # 6 (ULO1-6) 3. **Complete:** Discussion Board # 6 (ULO1-6)

		ULO4: Understand what a confidence interval shows (CLO 2) ULO5: Compute the confidence interval estimate for the mean with an assumed standard deviation (CLO 2) ULO6: Compute the confidence interval estimate for the mean with a standard deviation computed from the sample. (CLO 2) ULO7: Compute the confidence interval estimate for the proportion (CLO 2) ULO8: Determine minimum sample size for data in which you can compute a mean (CLO 2) ULO9: Determine minimum sample size for date in which you are computing a proportion (CLO 2)	
	Unit: 8 Hypothesis-Testing Methodology	ULO1: Create and interpret a hypothesis test for a mean with an estimated standard deviation. (CLO 2) ULO2: Create and interpret a hypothesis test for a mean with a calculated standard deviation (CLO 2) ULO3: Create and interpret a hypothesis test for a proportion (CLO 2) ULO4: Understand the difference between a one tail and a two tail hypothesis test (CLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 9 Part 1 & Part 2 2. **Complete:** Assignment # 7 (ULO1-6) 3. **Complete:** Discussion Board # 7 (ULO1-6)

		ULO5: Understand how to conduct a hypothesis test using the critical value method (CLO 2) ULO6: Understand how to conduct a hypothesis test using the p-value method (CLO 2)	
	Unit: 9 Two-Sample Tests	ULO1: Create and interpret a hypothesis test for two means assuming unequal variances (CLO 2) ULO2: Create and interpret a hypothesis test for two means assuming unequal variances (and assuming equal variances after checking with an F test for two variances) (CLO 2) ULO3: Create and interpret a hypothesis test for two means from related populations (CLO 2) ULO4: Create and interpret a hypothesis test for two proportions from independent populations (CLO 2) ULO5: Create and interpret a hypothesis test for two variances (CLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 10 2. **Complete:** Assignment # 8 (ULO1-2) 3. **Complete:** Discussion Board # 8 (ULO1-4)
	Unit: 10 Exam 2	ULO1: Create and interpret a hypothesis test for two means assuming unequal variances (CLO 2) ULO2: Create and interpret a hypothesis test for two means assuming unequal variances (and assuming equal variances after checking with an F test for two variances) (CLO 2) ULO3: Create and interpret a hypothesis test for two means from related populations (CLO 2)	1. **Complete:** Exam 2 (ULO1-5)

		ULO4: Create and interpret a hypothesis test for two proportions from independent populations (CLO 2) ULO5: Create and interpret a hypothesis test for two variances (CLO 2)	
	Unit: 11 Analysis of Variance	ULO1: Create and interpret hypothesis test for differences among more than two means using Analysis of Variance (CLO 2) ULO2: Create and interpret hypothesis test for differences among the factors using multiple comparisons (CLO 2) ULO3: Understand assumptions for using ANOVA (CLO 2) ULO4: Test ANOVA assumptions by conducting a Levene Test (CLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 11 2. **Complete:** Assignment # 9 (ULO1-2) 3. **Complete:** Discussion Board # 9 (ULO1-4)
	Unit: 12 Simple Linear Regression I	ULO1: Develop a single regression model (CLO 2) ULO2: Conduct and explain the results of residual analysis. (CLO 2) ULO3: Understand the assumptions of regression (CLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 13 Part 1 2. **Complete:** Assignment # 10 (ULO1-2) 3. **Complete:** Discussion Board # 10 (ULO1-3)
	Unit: 13 Simple Linear Regression II	ULO1: Perform a hypothesis test to see if there is a significant linear relationship between the dependent and independent variables (SLO 2) ULO2: Create a regression equation (SLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 13 Part 2 2. **Complete:** Assignment # 11 (ULO1-2) 3. **Complete:** Discussion Board # 11 (ULO1-2)

	Unit: 14 Statistical Applications in Quality Management I	ULO1: Explain the theory of control charts. (SLO 2) ULO2: Understand process variability (SLO 2) ULO3: Create and interpret a control chart for proportions. (SLO 2) ULO4: Create and interpret a control chart for areas of opportunity (SLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 14 Part 1 2. **Complete:** Assignment # 12 (ULO1-4) 3. **Complete:** Discussion Board # 12 (ULO1-4)
	Unit: 15 Statistical Applications in Quality Management II	ULO1: Create and interpret control charts for variables measures. (SLO 2) ULO2: Create measures for process capability and interpret them. (SLO 2) ULO3: Understand Six Sigma (SLO 2)	1. **Read**: Levine, D. M., Stephan, D. F., & Szabat, K. A. (2017). *Statistics for Managers Using Microsoft Excel, Global Edition*. Harlow, United Kingdom: Pearson Education Canada. a. Chapter 18 2. **Complete:** Assignment 13 (ULO1-3) 3. **Complete:** Discussion Board 13 (ULO1-3)
	Unit 16: Exam 3		1. **Complete:** Exam 3

** These descriptions and timelines are subject to change at the discretion of the instructor.*