

ABILENE CHRISTIAN UNIVERSITY
COLLEGE OF BUSINESS ADMINISTRATION
Spring I 2016 (3 credit hours)
BUSA 550 Foundations of Analytics



Lead Teacher: Ryan Jessup, PhD
Facilitator(s): Justin Bateh, DBA

Email: ryan.jessup@acu.edu
Email: jtb16a@acu.edu

Mission

Abilene Christian University (ACU)

The mission of Abilene Christian University is to educate students for Christian service and leadership throughout the world. This mission is achieved through:

- Exemplary teaching, offered by a faculty of Christian scholars, that inspires a commitment to learning;
- Significant research, grounded in the university's disciplines of study, that informs issues of importance to the academy, church, and society;
- Meaningful service to society, the academic disciplines, the university, and the church, expressed in various ways, by all segments of the Abilene Christian University community.

ACU College of Business Administration (COBA)

The mission of ACU's College of Business Administration is to glorify God by creating a distinctively Christian environment in which excellent teaching, combined with scholarship, promotes the intellectual, personal, and spiritual growth of business students, and educates them for Christian service and leadership throughout the world.

ACU Master of Business Administration (MBA)

The mission of the Master of Business Administration is to prepare business professionals for administrative roles that call on them to demonstrate ethical management and decision-making skills informed by principles of Christian vocation. This is accomplished through equipping business leaders to:

1. Practice effective leadership of themselves, their teams, their organizations, and their external constituents;
2. Lead organizational innovation efforts through effective integration of strategy with appropriate organizational processes and technologies;
3. Engage in data-informed decision-making; and
4. Make ethical decisions informed by values and goals that are consistent with relevant laws and Christian principles.

Course Overview

Course Description and Prerequisites

An introduction to the field of analytics, with emphasis on the application of statistical concepts, procedures and tools to add value to organizations. Topics include data and information acquisition, analysis, and application; data visualization and reporting; technological and organizational practices to support evidence-informed decision making and ethical issues. (Required course for all MBA students. Assumes knowledge of basic statistics.)

Integration of Christian Faith & Ethics

Numbers, data, and statistics are ever present in today's fast-paced business environment. From the boardroom to the manufacturing line to the human resources office to the advertising agency to the annual report, business men and women are constantly bombarded with quantitative information of assorted quality, and they must be able to rapidly and authoritatively respond with appropriate decisions based on their ability to distinguish facts from fiction. Unfortunately, as often highlighted by the media, there are also countless ways and opportunities in

business to distort numbers and statistics to make them appear more or less favorable than they really are. The focus of this course is to provide the student with the skills necessary to discern the quality of quantitative information, to make appropriate and ethical choices and decisions based on such knowledge, and to act faithfully and responsibly on behalf of the organizations they serve.

Course Competencies

As outcomes of the course, each student should be able to:

1. Interpret and transform data to inform and improve decision making within an organization.
2. Explain ethical issues involving the treatment, analysis, and dissemination of data.
3. Identify best practices related to organizational policies and practices for getting value from data.
4. Produce a clear, yet concise, data heavy report that addresses a relevant organizational issue.
5. Use relevant analytical and visualization tools to analyze, understand, and interpret data to make decisions across a wide array of topics.

Required Textbooks & Course Materials

Albright, S.C. & Winston, W.L. (2015). *Business analytics: Data analysis & decision making*, (5th Ed.). Cengage Learning: Stamford, CT. (ISBN: 978-1133629603)

Also, select ONE of the following books to read in this course:

- Siegel, E. (2013). *Predictive analytics*. Wiley: Hoboken, NJ. (ISBN: 978-1118356852)
- Davenport, T.H., & Harris, J.G. (2007). *Competing on analytics: The new science of winning*. Harvard Business Review Press: Boston, MA. (ISBN: 978-1422103326)
- Davenport, T.H. (2014). *Big data at work*. Harvard Business Review Press: Boston, MA. (ISBN: 978-1422168165)

Required Software

- Microsoft Excel 2007 or later
- DecisionTools Suite Add-in
 - This is available as a free download if you purchase a new copy of the required course textbook, *Business Analytics: Data Analysis & Decision Making, 5th Ed.*
 - If you do not purchase a new copy of the textbook, the software can be purchased [here](#).
- SolverTable Add-In
 - Free download available [here](#).

Assignments and Grading

Assignments (100 points possible; see Canvas for more detailed descriptions)

1. Problem Sets

Week 1 Problem Set	6 points
Week 2 Problem Set	6 points
Week 3 Problem Set	6 points
Week 4 Problem Set	6 points
Week 5 Problem Set	6 points
Week 6 Problem Set	6 points
Week 7 Problem Set	6 points

2. Projects

Projects: Statistical Report Writing	7 points
Projects: Supplemental Book Analysis	12 points
Projects: Draft of Organizational Data Analysis	5 points
Projects: Organizational Data Analysis	20 points

3. Discussion Questions

1-3 discussion questions per week, 1 point possible per discussion question	14 points
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Alignment of Assignments with Course Competencies and Program Student Learning Outcomes

Course Competency	MBA SLOs	Measurement(s)
1. Interpret and transform data to inform and improve decision making within an organization.	SLO 3.1: Students will utilize organizational practices and tools to collect, analyze, interpret, and use data to make decisions across a wide array of topics. SLO 3.2: Students will report findings clearly and with appropriate recognition of the findings' limitations.	Statistical report writing project; Organizational data analysis
2. Explain ethical issues involving the treatment, analysis, and dissemination of data	SLO 3.1 & 3.2 (see above)	Supplemental book analysis
3. Identify best practices related to organizational policies and practices for getting value from data.	SLO 3.1 & 3.2 (see above)	Statistical report writing project; Supplemental book analysis.
4. Produce a clear, yet concise, data heavy report that addresses a relevant organizational issue	SLO 3.1 & 3.2 (see above)	Statistical report writing project; Organizational data analysis.
5. Use relevant analytical and visualization tools to analyze, understand, and interpret data to make decisions across a wide array of topics.	SLO 3.1 & 3.2 (see above)	Organizational data analysis; Problem sets

Grades

A=90-100, B=80-89, C=70-79, D=60-69, F=0-59 points.

General Writing Expectations

(Adapted from Dr. Cole Bennett, Director of the ACU Writing Center, used with permission)

- **An excellent paper** (A) will adhere carefully to the prompt; be on-topic with the appropriate scope, length, and formatting; match the rhetorical task of the assignment; and be virtually flawlessly edited.
- **A good paper** (B) will approach the *excellent paper* guidelines, but may have too limited a scope or fall short of editing, logical sequencing, elaboration of ideas, or well-suited research.
- **An adequate paper** (C) is a readable attempt toward answering the prompt, but lacks sufficient development.
- **Sub-standard papers** (D and F) fall short of acceptable business and professional standards. At the professor's discretion, the student may be given the opportunity to revise and resubmit for half credit.

Statement on Rules of Engagement for Peer Consultation on Assignments

For the Problem Set assignments, it is acceptable to work with one other person. However, the work you turn in should be your own. Furthermore, you are expected to attempt every problem by yourself, without aid from someone else. It is not acceptable to divvy up the assignment questions among you or to let your partner do all of the work for you on any problem.

Academic Policies

Faculty Roles

A lead teacher and a facilitator will guide you through this course. Each is available to you by email and, if necessary, by phone. The facilitator addresses your day-to-day needs within the course and is your primary contact person. The lead teacher is assigned to multiple sections of the course and works in a supervisory role. Please direct all questions and issues to your facilitator; however, you may contact your lead teacher if a situation arises in which you have not gotten a response from the facilitator within 48 hours.

Engaged Learning in an Online Format

This online course invites students into a community of engaged learners. The course consists of seven weekly modules, with a new module beginning each Tuesday morning in the Canvas LMS (Learning Management System). We expect students to log in to the course frequently (at least 5 days per week), master the course material, whether written or in other digital media formats, and to engage the professor and fellow students through the Canvas medium. Weekly individual assignments will allow students to demonstrate mastery over the course outcome and competencies. Weekly readings and discussion boards will allow students to do what advanced practitioners do: Question the material, reflect on application, note areas of interest, respectfully challenge each other, and discover connections to other readings.

Initial posts on discussion questions are due no later than 11:59 pm Central time on the stated due date. Appropriate posts are concise, focused, substantive, well-reasoned, and cite readings that support arguments or opinions. Unless stated otherwise, each student must respond to the posts of at least two other students within 48 hours of the initial post deadline.

Assignment Due Dates

Please refer to the Canvas LMS for specific assignment and reading due dates. All deadlines are set for 11:59pm Central time and will occur on Tuesday, Thursday, Saturday or Monday. Any submission received after 8:00am Central time of the day following the deadline will incur an automatic 30% deduction; any submission not received within 1 week of the deadline will receive a zero. Required follow-up to a discussion question is due within 48 hours of the initial post deadline. If you are having difficulty completing an assignment on time, please consult with your course facilitator immediately.

Incomplete Policy

ACU Online policy states that all required work for an online course must be completed within the time framework established by that particular course's assignment calendar. Neither the facilitator nor the lead teacher is allowed to enter a grade of "Incomplete" for any student.

No grade of Incomplete will be given as a final course grade. A student will receive the grade earned at the conclusion of the course. In extreme circumstances, the student may request additional time to complete course assignments from the lead teacher. This request must be submitted in writing during the course term. The request must include the circumstances that have led to the necessity of the requested extension, along with a detailed plan of action which outlines how each assignment will be completed and proposes a date of completion. This request must be received by the lead teacher before the final day of class. In the rare situation that the request is approved, a submission date will be set by the lead teacher. At the agreed time, the submitted assignments will be graded, and if appropriate, the course grade will be changed.

Adults with Disabilities

Abilene Christian University is dedicated to removing barriers and opening access for students with disabilities in compliance with ADA and Section 504 of the Rehabilitation Act. The Alpha Scholars Program facilitates disability accommodations in cooperation with instructors. In order to receive accommodations, you must be registered with Alpha Scholars Program, and you must complete a specific request for each class in which you need accommodations. If you have a documented disability and wish to discuss academic accommodations, please call our office directly at (325) 674-2667 or email our compliance coordinator, Scott Self, at jss00c@acu.edu.

Questionable Materials

Occasionally, Abilene Christian University course designers and professors will include readings or audio-visual materials in courses that some individuals might deem offensive or questionable. The selection of activities, readings, and media are thoughtfully and prayerfully made. The decision to include such materials is made after careful consideration of several questions:

- Does the material simulate or portray actual life experience that enhances the learning potential of this course?
- Does the material deliver the information or experience in a manner that does not overly exaggerate or exploit the portrayal?
- Are there other, less objectionable, materials that could be employed to provide an equal or superior learning experience?

When such questionable materials are employed, every effort is made to prepare students for exposure to the materials and to provide an appropriate advisory statement.

COBA Honor Code

In joining ACU's College of Business Administration, students, faculty, and staff covenant to abide by the following ethical principles:

- **Competence** – To lead and serve well requires competence. And to become competent requires diligence and hard work. We owe it to all who have prepared the way and who will follow in our footsteps, to be good stewards of opportunities and resources. Thus, in all you do: set priorities, seek excellence and professionalism in your work, satisfy requirements, and take responsibility for your learning and performance. You cannot build competence if you lie, cheat, steal, or tolerate those who do.
- **Character** – A reputation of good character is built slowly through testing, yet can be destroyed in an instant by compromise or careless work, just as it can through injustice. Guard your character; it is worth more than a grade or promotion. "A good name is more desirable than great riches; to be esteemed is better than silver or gold" (Proverbs 22:1). You cannot build character if you lie, cheat, steal, or tolerate those who do.
- **Community** – A spirit of fellowship and mutual encouragement holds each community member accountable. Accountability leads to a healthy community through adequate preparations for the tasks at hand, respectful truthfulness in all situations, and adding value to the tasks at hand. As a community, we

must hold each other accountable to the principles of competence, character, and community. You cannot build community if you lie, cheat, steal, or tolerate those who do.

ACU's Academic Integrity Policy

Violations of academic integrity and other forms of cheating, as defined in Abilene Christian University's [Academic Integrity Policy](#), involve the intention to deceive or mislead or misrepresent, and therefore are a form of lying and represent actions contrary to the behavioral norms that flow from the nature of God. Violations will be addressed as described in the policy. While the university enforces the policy, the most powerful motive for integrity and truthfulness comes from one's desire to imitate God's nature in our lives. Every member of the faculty, staff and student body is responsible for protecting the integrity of learning, scholarship and research. The full policy is available for review at the link above.

1. **Plagiarism** – Plagiarism is defined as use of intellectual material produced by another person without acknowledging its source. For example:

- Wholesale copying of passages from works of others into an assignment, paper, discussion
- posting, thesis or dissertation without acknowledgment.
- Using the views, opinions, or insights of another without acknowledgment.
- Paraphrasing another person's characteristic or original phraseology, metaphor, or other literary device without acknowledgment.

Faculty members monitor student work for evidence of plagiarism.

2. **Lying** – Inventing data or sources or making false attributions about the origin of material or offering a deceptive reason for an absence or delay in the completion of academic work.
3. **Cheating** – Facilitating or participating in any process that circumvents the intent of any exam, test, quiz, paper, or assignment.

Any dishonest act observed or reported will be investigated and if proven, be reported in administrative offices and records, and may be subject to any or all of the following outcomes based on severity:

1. A zero for the assigned work
2. A failing grade for the course
3. Dismissal from the university

Reading and Assignment Schedule

[Note: This section will only be included for course application purposes. All of this information will be presented in the Canvas LMS.]

Reading Schedule by Module

1. *Business Analytics* text, Ch. 4-5
Articles:
[Data is the New Middle Manager \(WSJ\)](#)
2. *Business Analytics* text, Ch. 7-8
Articles:
[Chances Are](#)
[What's Up With Big Data Ethics?](#)
[How Target Figured Out A Teen Girl Was Pregnant Before Her Father Did](#)
[Ethics For Big Data and Analytics](#)
3. *Business Analytics* text, Ch. 9
Complete the supplemental book by the end of Week 3.
4. *Business Analytics* text, Ch. 10-11

5. *Business Analytics* text Bonus Online Material, Ch. 19, Appendix A
6. *Business Analytics* text, Ch. 13, 17: pp. 657-717; 947-983
 Articles:
[Hadoop and Big Data Storage: The Challenge of Overcoming the Science Project](#)
[Lift Chart \(Analysis Services - Data Mining\)](#)
[Lift Charts](#)
[Understanding the Lift Chart](#)
7. *Business Analytics* text, Ch. 12
 Articles:
[Don't Blink: The Hazards of Confidence](#)
[In basketball, physics predicts how big a lead your team needs to win](#)

Assignment Schedule and Deadlines

Week	Assignment	Points
1	Week 1 Problem Set	6
2	Week 2 Problem Set	6
3	Week 3 Problem Set	6
4	Week 4 Problem Set	6
4	Projects: Supplemental Book Analysis	12
5	Projects: Draft of Organizational Data Analysis	5
5	Week 5 Problem Set	6
5	Projects: Statistical Report Writing	7
6	Week 6 Problem Set	6
7	Week 7 Problem Set	6
7	Projects: Organizational Data Analysis	20
All	Discussion Questions	14
	Total Points	100