Randolph College
Department of Economics and Business
BUS 3368 Business Analytics

Instructor: ATM Sayfuddin

Classes: Online (asynchronous).

Office Meetings: TBD.

Office phone: (434) 947-8303

Email: asayfuddin@randolphcollege.edu

Reading

- Required: *Introduction to Statistics* by David M. Lane, David Scott, Mikki Hebl, Rudy Guerra, Dan Osherson, and Heidi Zimmer. This is a free, online book, available in several versions: Web Version (2.0), Interactive e-book (for IOS and OS X), Mobile, PDF, and e-Pub. Use whichever suits you best.

- Optional: *R for Marketing Research and Analytics* by Chris Chapman and Elea McDonnell Feit, 2nd edition. Publisher: Springer, ISBN-13: 978-3319144351

- Optional: *Principles of Marketing* by Kotler and Armstrong, 17th ed., Pearson, 2018. ISBN: 978-0-13-449251-3

- If you need additional resources to learn R, go to https://cran.r-project.org and select "Contributed" on the sidebar (under "Documentation") to the left; there are many useful eBooks and documents contributed by others.

Course Information

This course introduces data analytics to students from diverse academic backgrounds, including those with no previous analytics knowledge. The course is divided into three parts. The first part introduces R as a programming language and a tool for statistical analysis at the basic and intermediate levels. In order to learn and practice R programming, several 4-hour courses will be assigned on DataCamp.com. You will receive a separate email regarding this. The second part provides a foundation of probability and statistics, including regression, hypothesis testing, and other related topics in inferential statistics. The final part utilizes everything learned in the first two parts to dive into a range of business analytics topics, including market segmentation analysis, perceptual mapping, consumer choice models, and conjoint analysis. Emphasis will be given into applications of relevant concepts and interpretation of results rather than theoretical aspects.
Prerequisite: Introductory Statistics or Applied Statistics at the college level, or any equivalent courses or permission of the instructor.

Course Structure: Course grades will be based solely on the total number of points achieved on two exams (20 points each, or 40 points in total) and four projects at the end of the semester (15 points each or 60 points in total).

Exams: There will be two midterm exams or take-home tests. The first exam will test your knowledge in basic and intermediate R programming. The second midterm will assess your probability and statistical knowledge, which will require using R.

Final project: Students will work on four projects during the last two weeks of the course. These projects will be related to the business analytics topics covered in the final two weeks of the course. Students will work on these projects individually. More information regarding the projects will be shared via the learning management system (Canvas or Moodle).

Evaluation and Grading

Exams	40 points
Exam I	20 points
Exam II	20 points
Final Projects	60 points (15 points each)
Total	**100 points**

Grading scale

A	93 – 100	C	73 – 76
A-	90 – 92	C-	70 – 72
B+	87 – 89	D+	67 – 69
B	83 – 86	D	63 – 66
B-	80 – 82	D-	60 – 62
C+	77 – 79	F	Below 60

Class Policies

Zoom Group Meetings. There will be three optional group meetings every week on Monday, Wednesday, and Friday between 3 - 4 pm. These meetings are for coding practice purposes, and also to allow me a chance to answer your questions regarding course materials, homework problems, and exam preparation. Attendance to all three meetings each week is recommended but not required.

Late work. Please note that each day an assignment is late, your grade on that assignment will be reduced by 1/3 of a letter grade (or by equivalent points).

Make-up work. Make-up work for graded assignments or class tests can be arranged by consulting with me before the due date. You must notify me in advance by contacting me via email.

Syllabus Changes. Once the course begins, the syllabus may not be changed in a substantial manner. However, the order in which course material is presented may be adjusted, as the need arises. For this reason, it is important for you [the student] to check your e-mail account on a regular basis so you are informed of any changes to the course syllabus.

Accommodations:
Randolph College is committed to providing learning experiences that are accessible for all students, and will make reasonable accommodations for individuals with documented disabilities. If you have a learning difference or a disability — mental health, medical, or physical impairment — please contact Diane Roy, Coordinator of Access Services, in the Academic Services Center, 4th floor, Lipscomb Library; 947-8132; droy@randolphcollege.edu.

Plagiarism:
Plagiarism, an act that violates the College's Honor Code, is using the words or ideas of another person without properly acknowledging the source. Ignorance of the conventions of documentation is not a defense for plagiarism. The Student Handbook (www.randolphcollege.edu/studenthandbook) provides examples of ways to avoid it. You can educate yourself even more by speaking about the topic with faculty and Writing Lab tutors.

Honor Code and the Honor Pledge:
The Student Handbook (www.randolphcollege.edu/studenthandbook) describes the Honor Code and the Honor System. If you have questions about how the Honor Code pertains to this class, it is your responsibility to ask them.

Randolph students take the following pledge: "I pledge absolute honesty in my academic work and in all personal relationships at Randolph College. I will maintain the integrity of my word and I will respect the rights of others. Realizing that these standards are an integral part of life at Randolph College, I assume my obligation to uphold this honor pledge. If at any time I fail to live up to my obligations of this pledge, I will report myself to the Chair of the Judiciary Committee. I will also ask others to report themselves for any infraction of this pledge."

Business Analytics
Tentative Course Plan

WEEKS	UNITS	CHAPMAN & FEIT (BUSINESS ANALYTICS)	DAVID LANE (STATISTICS EBOOK)	KOTLER & ARMSTRONG (MARKETING)	TOPICS
WEEK 1	**Unit 1**	Ch 2			Basics of R programming
	Unit 2	Ch 2 & 3			Basic/intermediate R Programming
WEEK 2	**Unit 3** ***Take-home test 1 in this unit***	Ch 3 (section 3.4)	Ch 2		**Test I,** Visualizing Techniques
	Unit 4	Ch 3 (section 3.1 - 3.3) and Ch 6	Ch 3 & 11		Summarizing Distributions, probability & Hypothesis testing
WEEK 3	**Unit 5**	Ch 6	Ch 15		Analysis of Variance: F Distributions
	Unit 6 ***Take-home test 2 in this unit***	Ch 7	Ch 14		**Test II**, Linear Regression
WEEK 4	**Unit 7**	Ch 11		Ch 7	Segmentation Analysis & Project 1
	Unit 8	Ch 8		Ch 4 & 5	Perceptual Mapping & Project 2
WEEK 5	**Unit 9**	Ch 13			Consumer choice models & Project 3
	Unit 10	Lecture Notes		Ch 9	New Product Decisions & Project 4