

DATA ANALYSIS FOR MANAGERS (4368)

Sem: Spring 2022 Class Day/Time: Mon 6:15PM-9:30PM Room: Gerlach Hall 305

Instructor: Professor Telesilla Kotsi E-mail: KOTSI.1@OSU.EDU

Office Hours: Friday, 3:00PM-4:00PM or other time by appointment Location: Fisher Hall 614

https://calendly.com/professorkotsi/15min

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Course Description: Data are becoming widely available in all disciplines of business. The analysis of data in accounting, finance, marketing, operations, and human resources is based on the same underlying principles. This course exposes you to these fundamental principles and to examples of applications from a variety of disciplines. As a result, this course develops the quantitative thinking and skills needed for managerial data analysis. Concepts covered in this class will allow you to be exposed to graphing and describing data, probability and probability distributions, data sampling and making inferences from data, confidence intervals, hypothesis tests, and regression analysis.

Course Learning Outcomes: By the end of the course, student should be able to:

- Select among various descriptive analysis techniques the most appropriate to summarize the characteristics of a data set.
- Estimate the uncertainty of data sets to advance decision-making.
- Interpret computer-generated output for regression to guide model formulation.

Pre-Requirements: Enrollment in WPMBA program. Not open to students with credit for 6271 or 870.

Required Texts/Materials: Title: MindTap with eBook for Business Analytics: Data Analysis & Decision Making Author(s): Albright/Winston Online Website Access: Mindtap

The courseware (MindTap with eBook included) for this course is being provided via the OSU CarmenBooks program. Through CarmenBooks, students obtain publisher materials electronically through Carmen/Canvas, saving them up to 80% per title. The fee for this material is included as part of tuition and is listed as CarmenBooks fee on your Statement of Account. ***Unless you choose to opt-out of the program, you do NOT need to purchase any materials for this course at the bookstore. For more information on the program or information on how to opt out, please visit the CarmenBooks website. We will discuss more information about how to use the eBook in the first lecture.

Evaluation Criteria:

Graded Components	% of Total	Type
Preparation	20%	N 🛊
Homework	20%	O 🗪
Projects $(2+1)$	60%	N 🛊
Trojects (2 + 1)		C ###
Practice Sets	Bonus	O 🗪

Requirements for each form of graded component. Failing to follow these will represent academic misconduct. See below.

Independent Work [N ↑]: Strictly non-collaborative, original individual work. You may discuss this assignment with your instructor only. Discussions with other individuals, either in person or electronically, are strictly prohibited.

Collaboration Required [C ♣]: An explicit expectation for collaboration among students either in class or outside of class (i.e. group work).

Collaboration Optional [O ♣]: Students are permitted, but not required, to discuss the assignment or ideas with each other. However, all submitted work must be one's original and individual creation.

Academic Conduct:

If a student is suspected of, or reported to have committed, academic misconduct in this course, I am obligated by University Rules to report my suspicions to COAM. If you have questions about the above policy or what constitutes academic misconduct in this course, please contact me. See OSU Prohibited Conduct – Section 3335-23-04(A)

University Policies, Services and Resources (go.osu.edu/UPolicies)



Fisher Undergraduate Handbook and QuickLinks (www.bsbalinks.com)



Fisher Navigator Resource Portal (www.nav-1.com)



University Healthy and Safety Guidelines can be found at <u>safeandhealthy.osu.edu/</u> For disability services, go to <u>slds.osu.edu</u> or contact <u>slds@osu.edu</u>.

Course Format and How this Course Works:

Pace of activities: This course is divided into 3 sections organized in **weekly modules** that are released at least one week ahead of time. Students are expected to keep pace with weekly deadlines and check your Carmen announcements frequently.

Credit hours and work expectations: This is a 3-credit-hour course. According to Ohio State policy, students should expect 3 hours per week of time spent on direct instruction (e.g., instructor content, Carmen activities, quizzes, etc.) in addition to 6 hours of homework (reading and homework preparation) to receive a grade of (C) average.

Attendance and participation requirements: Your physical presence and thus attendance is required because this is an inperson course. If you test positive with COVID-19 and you need to quarantine, please email me your test results at least 6h in advance. This will give me the chance to provide you with a Zoom link on time that will allow you to observe the lecture (of course, only if you feel well enough), but NOT to actively participate in the class meeting. Active on site and remote participation would require the class to be of a hybrid design, which is not what this class was structured to be since OSU has committed to inperson for Spring 2022. In the case that you are present through a Zoom link, please make sure to contact your group (call or chat with them) to contribute to the weekly homework the best way possible. If you can't work with your teammates, please email me your solutions in a spreadsheet by the end of the respective week to be granted full points for the weekly homework (by Friday midnight the latest). There are NO make-ups to replace the weekly homework.

Moreover, I understand that life can get busy and emergencies can occur at anytime for everyone. If you have a personal or professional situation that might cause you to miss an entire week of class, please make sure to contact me *at least 24h in advance*. I will work with you individually to find the best solution for your case and keep it as consistent as possible to my policy above for a COVID-19 emergency. The bulk of the lecture material will be uploaded on Carmen to give everyone the opportunity to stay on track. This cannot be considered a replacement for the actual lecture since the entire lecture would be recorded from start to end only in rare occasions.

Graded Component Details

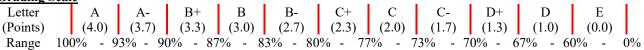
Preparation Details: Due to the course content, in most of our meetings, we will follow a flipped classroom approach. As a result, students will be introduced to the learning material before class through readings and other material posted in Carmen. Students must submit a few comprehension questions <u>before each class meeting to demonstrate their preparation level</u>.

Homework Details: Our classroom time will be used to deepen students' understanding through discussion with peers and problem-solving activities facilitated by your instructor. During each class meeting, you will be assigned to groups and submit your homework at the end of the session (by midnight the latest). You will work on the homework with your peers. These will NOT be graded for accuracy or degrees of correctness; rather, I will take into consideration the level of effort, engagement, and growth exhibited by each group. Please use these weekly activities to further hone your skills and practice what you've learned. The requirements of the course are identical for everyone. There are no make-ups for poor performance through "extra credit" work.

Project Details: Out of the 1,000 points to earn in the course, the projects account for 600 points (200*3). Two of the projects are independent work and one project requires groupwork. To get full points for this collaborative project, you will be asked to provide peer evaluations. There will be no extra points for your peer evaluations but there will be a penalty if you do not submit them by the due date of the project. Any project submitted after its due date will be graded for up to 120 points, so you should only consider doing so only under extreme circumstances. The three projects are non-comprehensive in the sense that they focus on the material since the last one. The subject matter, however, often builds on prior material and thus requires an understanding of it.

Practice Sets: There are six practice sets which students can submit for bonus points. The maximum points that you can get by submitting each practice set is 25 bonus points. Students are permitted, but not required, to discuss the assignment or ideas with each other. However, all submitted work must be one's original and individual creation.





Note: Above percentages are % of overall points earned [or are % rankings of students, e.g. if scaled to curve]

Additional Policies

Course Technology: For IT help contact the Ohio State IT Service Desk ocio.osu.edu/help servicedesk@osu.edu

- 1. Required Software. Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. If possible, you should familiarize yourselves with Excel as we will often work through problems collectively. These hands-on exercises are an important part of learning the material and honing skills. There are more instructions in Carmen about the right Excel tools you will need. You will not be asked to submit your spreadsheets, so you can use any other tool you prefer instead, for example, load and analyze the data with Python.
- 2. Carmen Access: For questions about specific functionality, see the <u>Canvas Student Guide</u>. You will need to use BuckeyePass multi-factor authentication to access your courses in Carmen. To ensure that you are always able to connect to Carmen, it is recommended that you take the following steps:
 - Register multiple devices in case something happens to your primary device. Visit the <u>Duo Mobile application</u> help article for step-by-step instructions.
 - Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click Enter a Passcode and then click the Text me new codes button that appears. This will text you ten passcodes good for 365 days that can each be used once.
 - Download the <u>Duo Mobile application</u> to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options meet the needs of your situation, contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

Course-specific Copyright Policy: Material provided by the instructor may not be re-posted anywhere without the explicit permission of instructors. See University Copyright Policy.

Additional Course Resources

Getting Help: I understand that this course can be challenging. Unless the question is of a sensitive nature, all questions should be posted to Carmen in the week's DISCUSSION section. This allows for the open sharing of information and ensures that all students receive the same information. Additionally, I can see which topics should be reinforced in class. If, despite my clarifications in the Discussion section and your classmates' comments, you believe you need additional help, you can email me directly. You can schedule an appointment with me to discuss any issues through the following link (which gives you direct access to my calendar and reduces the amount of emails you need to exchange with me): https://calendly.com/professorkotsi/15min

E-mail Policy: (a) All e-mail must be sent using your osu.edu or buckeyemail.osu.edu account; (b) Do **NOT** send e-mail to instructor or TAs via the Canvas mail tool, even as a Respond; (c) <u>Subject line must include MBA 6273</u>.

Software: This is a course in statistical modeling, and many of the computations will be done using software. We will use Excel for Microsoft 365 as the primary software for analysis. As you are a student, this can be obtained very cheaply as outlined above. This version of Excel includes a few relevant enhancements (compared to older Excel verisons) to its data analysis capabilities that you will find very useful. Please note that I will be teaching in a PC environment. Mac users will endure a few differences between Excel versions. Since homeworks and projects will be given on PCs, I encourage Mac users to familiarize themselves with any differences.

MBA6273-SP2022 COURSE SCHEDULE (4368)

Week	Date	Topics in Detail	Readings in MindTap	
1	1/10	Introduction - Describing Data	Chapter 1 and 2.1-2.2	
2	1/24	Relationships Among Variables	Chapter 2.3-2.4	
3	1/31	Relationships Among Variables	Chapter 2.5-2.7 and 3	
4	2/7	Probability and Distributions	Chapter 5.1-5.2	
5	2/14	(Individual) Project 1 on Chapters 2, 3, 4 Guest Lecturer: Eduardo Contreras (Principal Consultant at 4most)		
6	2/21	Normal/Binomial Distribution	Chapter 5.4-5.5	
7	2/28	Sampling Distributions	Chapter 7.1 and 7.4-7.5	
8	3/7	Confidence Interval Estimation	Chapter 8	
9	3/21	Confidence Interval Estimation	Chapter 8	
10	3/28	(Group) Project 2 on Chapters 5, 7, 8		
11	4/4	Hypothesis Testing	Chapter 9	
12	4/11	Regression Analysis	Chapter 10.1-10.5	
13	4/18	Regression Analysis	Chapter 10.5-10.6b and 10.7	
14	4/25	Regression Analysis	Chapter 11	
15	5/2	(Individual) Project 3 on Chapters 9, 10, 11 Guest Lecturer: Elena Elese (Design Researcher at Ford Motor company)		