

## **Descriptive Business Analytics (BAN 5733) –Syllabus (Tentative)**

**(All students must check class site regularly for schedule, updated syllabus, etc.)**

Professors: Dr. Miriam McGaugh and Dr. Goutam Chakraborty

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**Class Materials:** Most of the class materials will be distributed via the online web site, Brightspace, for this class (<https://online.okstate.edu/>). If you are a registered student for this class, you should be able to see this course when you log-in to the web site (the course becomes active one-week before classes begin). If you have problems accessing the class site, please call OSU's IT help desk (405-744-435) or, (toll free) 1-877-951-4836).

**Teaching Assistant (TA):** Will be announced in the first week of class. Please note that the TA will be your primary point of contact for many issues related to this class. TA contact details will be announced by first week.

**E-mail:** Please use the class discussion bulletin-board via class site for any general questions, comments, clarifications about any of the class topic (including cases, assignments etc.). Use e-mail to TAs sparingly and only for questions that disclose or ask for personal information (such as grades, scores, etc.) *There is no need to copy faculty with your email to TA – if the TA is unable to answer your question, he/she will discuss with faculty and get back to you.*

**Instructor Response:** The TA will respond to student inquiries within 24 hours during Monday-Friday business hours. If a response is not received within 24 hours, please follow-up with the TA with a CC to Dr. McGaugh. Students will expect grades for assignments to be posted to the Gradebook in Brightspace within one week of turning in the assignment.

**Class Discussion via class site:** We will use this site extensively for communication among students as well as between students and the instructor. The discussion will be via a bulletin-board type system with specific folders for different aspects of this course. There may be multiple forums (folders) in this bulletin board. Please check these folders regularly. Please post your questions only in the **appropriate forums**. Please use appropriate subject line in your posting and use threaded discussion whenever possible.

### **Required Text**

There is **no required text book** in this class. We will primarily use readings off the web, cases, SAS training materials, chapters from reference books, cases (mini and large) etc. in this class (some of these are shown in the schedule). We have also indicated a number of good books (under reference texts) on this topic that you may find useful. Finally, you may need to consult and brush up on basic statistics and probability concepts (any introductory level statistics or marketing research book will work for this purpose).

**Reference Texts (whenever possible, these will be put on reserve at OSU Stillwater library. OL students may be able to access some of these materials via OSU's online library access)**

1. Statistical Analysis for Business Using JMP: A Student's Guide, by Willbann D. Terpening, Harvard SAS Press, Cary, NC: SAS Institute Inc.
2. Analytics at Work: Smarter Decisions, Better Results, by Thomas Davenport, Jeanne Harris and Robert Morrison, Harvard Business School Press. (OSU Stillwater library call number: 658.4013 D247a)
3. Contemporary Database Marketing by Martin Baier, Kurtis Ruf and Goutam Chakraborty, published by Racom Communication (OSU Library call number: [658.84 B152c](#))

4. Customer Relationship Management: A Databased Approach by V. Kumar, and Werner J. Reinartz, published by J. Wiley (OSU Library Call number: [658.8120285 K96c](#) )

### Required Cases

We will use some mini-cases that we will make available for free. In addition, we will use large cases (such as those from Harvard Business School and others), that you will have to purchase online (we will announce via class site posting or, email).

### Real Office Hours (for Dr. McGaugh)

Office hours will be every Tuesday from 9:30 – 11:30 am or by appointment in Spears room 307.

### Virtual Office Hours (to get faculty opinion on any issue related to this class)

Please use the online platform for this purpose. Class TAs will monitor this platform closely and try to answer your questions as quickly as possible. OL students will also have an option to use a “Go To Meeting” based call-in to talk to faculty at 3 PM US CDT on each Monday’s lab. The information below will be used every Monday throughout the semester, except University Holiday’s. This information will also be found on the online platform calendar for your convenience.

Got To Meeting Information:

**BAN 5733 Lab**

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/974593325>

You can also dial in using your phone.

United States: +1 (872) 240-3412

**Access Code: 974-593-325**

First GoToMeeting? Try a test session: <https://care.citrixonline.com/g2m/getready>

### COURSE OBJECTIVES

This course has five major objectives that fit within five of the program learning goals.

Course Objective	Program Learning Goal
Students will be able to engage in analytical reasoning to break problems into their component parts; identify important patterns by analyzing data; and test for assumptions behind models.	• Critical Thinking
Student can apply science and business principles to analyze and interpret data, using analytic and computer-based techniques.	• Critical and Creative Thinking
Students will be able to present written results from their analyses by relating those back to the business issues that demonstrate a mastery of language and mechanics.	• Written Communication

Students will be able to present their results orally using a message that is well organized, concise and quickly understandable by business professionals.	• Oral Communication
Students will be able to use appropriate tools and technologies for data visualization and statistical model building	• Technology Skills

### Course Description

To be effective in a competitive business environment, an analyst needs to be able to translate business data into information to make better decisions and to convert business information about past performance into reliable forecasts. An effective analyst also should be able to identify the analytical tools and data structures to anticipate market trends. In this course, you will gain the skills required to succeed in today's highly analytical and data-driven market economy. This overview course introduces the basics of data analysis including variable associations, simple regression, multiple regression, logistic regression, segmentation, design of experiments, and forecasting techniques to those who want to become analytics professionals.

Students will be expected to use state-of-the-art industrial strength analytics software from SAS and others to analyze business data and make strategic recommendations for managerial actions. This class is intended for master's students with technical backgrounds who are willing to learn SAS, R and other programming to do data analysis. My philosophy in teaching the course is "*you learn by doing*," that is, you should be mentally prepared to work extensively with software in analyzing data sets using various techniques. The course will use lectures, data analysis using state-of-the-art analytics software, case discussions and exercises/assignments.

### Course Format

*Lectures:* The link for each video lecture will be posted on the BRIGHTSPACE. It is your responsibility to watch the lecture video and do appropriate readings/exercises **before** coming to the lab. *All students (both non-online learning and online learning)* will be given access to lecture videos.

#### *Labs*

- *Non-Online learning students:* All non-online learning students **must attend Monday lab (starts 3 PM US CDT) in each week**. The lab sessions will be used primarily for doing case analysis and presentations, quizzes, discussions of readings, questions and answers, etc. All lab sessions will be held in the Gundersen computer lab.
- *Online learning students:* You **do NOT have to attend labs physically** but we *expect you to go through what we cover in lab by following each week's lab audio/video session*. You will be given access to both **live** and **recorded** lab audio/video session via Go To meeting. If you can attend the live lab session, then you may ask questions/clarifications at the beginning (3 PM US CDT on Mondays) of the lab session. You may then continue to watch the live lab or drop off, if needed, and later watch the recordings for the rest of the lab session.

Note: As instructors, we retain the right to modify course syllabus/schedule/requirements as appropriate based on how the class progresses. Any such changes will be communicated to you via email/class site or in class (lab).

## Class Requirements (for Non-Online Learning Students in only)

Special prerequisite: All non-online learning students are required to attend a boot camp in Stillwater before the classes start.

Exams: One mid-term (**200 points**) and comprehensive final exam (**250 points**). Exact dates and times for the exam will be announced in class or via BRIGHTSPACE.

Software: We will use many software packages including JMP, SAS, Tableau and R extensively in this course. We may also use some other software SAS Visual Analytics as needed. To start with, please **download and install the JMP 13** software on your personal PC/laptop from OSU's IT site (<https://app.it.okstate.edu/sdc/>). More options for other software will be announced as the class progresses.

Lab Participation, Attendance and Exercises (Individual): Because of the emphasis on “hands-on learning” in this course, attendance at all scheduled lab meetings is *mandatory*. You are responsible for having read and analyzed the assigned cases and/or readings or finish watching the video lectures prior to each lab session. You can expect to be called upon to comment on these materials on a regular basis in the lab sessions. We may also use short pop-up quizzes from time-to-time to evaluate your understanding of lecture materials and assigned readings. These pop-up quizzes will be administered at the beginning of the lab and will be used for class participation points. If you are late in coming to the lab and/or absent, you will miss the participation points for that session. Throughout the semester, you will also be working on many exercises (using appropriate software) in the lab and during the week. Lab work (exercises, participation, discussion, etc.) will count for **150 points**. You must bring a table card (that clearly shows your name) to each lab session.

Group Assignments: There will be many group assignments (**400 points**). These will typically involve extensive data analysis using real data sets as well as case analyses. These may also include writing case reports, working on a team project, etc. You may be asked to make presentations of your assignment solutions in class. All of these assignments will be done in groups. You will work in small groups of students to do these assignments. We may use the peer evaluations from time-to-time to adjust assignment grades for a group member, as necessary.

Semester Grades: The final grade will be based as follows: 90% or above will result in A, 80% or more will result in B, 70% or above will result in C, 60% or above will result in D. Those getting less than 60% will get an F. We will look at the distribution of the total scores and use any appropriate normalization as needed.

Late Assignments: Any assignment (individual or groups) must be turned in by the class time on the due date via Brightspace drop box (not emails). All late assignments (*even 1-minute late*) must be turned in **via the Late Drop Box** and will be *penalized* as follows:

- One late assignment (within 1-hour of due date and time) – *no penalty*
- All other late assignments will carry following penalty structure:
  - Within 1 hour of due date and time – 10% penalty
  - More than 1 hour but less than 24 hours of due date and time – 25% penalty
  - More than 24 hours but less than 48 hours of due date and time – 50% penalty
  - More than 48 of due date and time – will not be graded (no credit)

We enforce this rule because we believe that part of effective functioning in business is the ability to complete projects on time. **Please do not email/call/contact us or our TAs with excuses (however valid they may be) about making exceptions to our late submission policy.**

## **University Policies**

**Note:** More details on the assignments/cases/readings/projects will be posted on the class site. Also, for all other issues such as add/drop policy, academic integrity etc., we will follow OSU guidelines as posted in the site below – look at the bottom of the following page for syllabus

attachment <http://academicaffairs.okstate.edu/sites/default/files/Fall%202017%20Syllabus%20Attachment.pdf>.

Drop Policy: Information about university drop policy and dates is at this website: <http://registrar.okstate.edu/>. To drop this course, contact the Registrar's office, (405) 744-6876, or drop through Banner Self Service, <http://my.okstate.edu>

Academic Integrity: Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity (e.g., unauthorized collaboration, plagiarism, multiple submissions, cheating on examinations, fabricating information, helping another person cheat, unauthorized advance access to examinations, altering or destroying the work of others, and fraudulently altering academic records) will result in your being sanctioned. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript (F!), and being suspended from the University. You have the right to appeal the charge. Contact the Office of Academic Affairs, 101 Whitehurst, 405-744-5627, <http://academicintegrity.okstate.edu/>.

*Student Disability Service Issues:* If any member of the class believes that s/he has a physical, emotional, or psychological disability and needs accommodations of any nature, the instructor will work with you and the university Office of Student Disability Services (SU 315, 744-7116 v/t) to provide reasonable accommodations to ensure that you have a fair opportunity to perform in this class. Please advise the instructor of such disability and the accommodations as soon as possible. You will need to also contact the Student Disability Services office. receive accommodations. No accommodations will be made without prior notification.

## Class Requirements (for Online Learning (OL) Students Only)

**Special Note:** All online learning (OL) students **are very strongly encouraged** to watch either live or recordings of boot camp in Stillwater that non-online learning students go through before the classes start. This will help you get the most out of this class.

Also, OL students **do NOT have to attend labs physically** but we *expect you to go through what we cover in lab by following each week's lab audio/video session*. You will be given access to both **live** and **recorded** lab audio/video session via Go To meeting. If you can attend the live lab session, then you may ask questions/clarifications at the beginning (3 PM US CDT on Mondays) of the lab session. You may then continue to watch the live lab or, drop off if needed and later watch the recordings for the rest of the lab session.

**Exams:** One mid-term (**200 points**) and one final (**250 points**). The final exam will likely be a comprehensive exam and it will be administered through Brightspace with a proctor. It is your responsibility to set up proctoring arrangements by contacting the online-learning office (405-744-4048 or, email [spearsonline@okstate.edu](mailto:spearsonline@okstate.edu) ) within **first two weeks** of the semester.

**ACTION:** one week prior to course start date, go to the Spears School of Business Online Learning website to choose a testing center at: [spearsonline.okstate.edu](http://spearsonline.okstate.edu), and click on “**Select Testing Center**” at the top right of the page. Follow the instructions to identify your testing center. Up to one week before each exam start date, make your appointment directly with your testing center to take each exam while being monitored by a proctor for test security reasons. The exam and/or exam instructions will be sent to your testing center 3 days prior to the exam start date. Contact the Spears School Online Learning office at [spearsonline@okstate.edu](mailto:spearsonline@okstate.edu), or call (405) 744-4048 if you have any questions regarding the testing center sign up process. You may also visit <http://spears.okstate.edu/online/guide>.

**Computer Requirements:** Below are computer requirements for online students to have the best experience possible.

- A broadband internet connection
  - Windows 7 or Mac OS Mavericks or newer operating system are preferred
  - Google Chrome or Mozilla Firefox web browser
  - **VLC Viewer** video player (click on link to download)
- Note: lecture videos are not compatible with Internet Explorer or Edge

**Software:** We will use many software packages including JMP, SAS, Tableau and R extensively in this course. We may also use some other software SAS Visual Analytics as needed. To start with, please **download and install the JMP 13** software on your personal PC/laptop from OSU's IT site (<https://app.it.okstate.edu/sdc/>). More options for other software will be announced as the class progresses.

**Exercises (Individual):** Because of the emphasis on “hands-on learning” in this course, you will be asked work on several exercises and **at least 1 mini case**. These exercises/mini case will reinforce the concepts covered in the video lectures and demonstrations. The exercises will count for **450 points**. The mini case will count for **100 points**. You must submit your solution to these exercises on time via the appropriate drop boxes in the Brightspace site. For mini case, you will be asked to turn-in your Powerpoint slides and present it via one of the live lab sessions. You must let faculty know, *at least 2 weeks in advance*, which week of lab you want to present the mini case. Faculty may deny your choice of the mini case to present if too many students select the same week to present. In that case, two students will be assigned as first-come-first-serve basis.

**Group Work (Optional):** You may choose to select a large case to analyze and write-up as a group (maximum of 3 persons/group). If you take this option, you form your own group and let faculty know *at least 2 weeks in advance* of when the large case is scheduled in the lab. Your group will present the case during the lab session. All group

members should be present on the GoTo Meeting session for the presentation. If you take this option, it will count for **100 points** and your exercise points (individual) will be reduced to **350 points** (reducing the number of individual exercises to be turned in by two).

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