



DA 310 – INTRODUCTION TO ANALYTICS

FALL 2017 COURSE SYLLABUS

Instructor: Winnie Li
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Office Hours: Tues/Thur 10:30am – 12:00pm or by Appointment

COURSE INFORMATION

Introduces the importance of data management, data analysis and data representation. Includes the use of common statistical tools and their applications in decision-making and research. Emphasis is on quantitative and technology based analysis of real world problems to improve decision-making in various disciplines, along with report writing and presentation skills.

COURSE OUTCOMES

After completing this class, students should be able to:

- Identify the relationship between data analytics and business decision-making process
- Analyze and evaluate research methodologies
- Identify the most common data analytics methods and discuss how each method best applies to specific analytics questions
- Identify the most common technological tools used in data analytics
- Evaluate business problems and determine suitable analytical methods
- Use technological tools such as Excel or R to manage data sets in various sizes and formats
- Interpret research study results and clearly state the conclusion in reports and presentations with close attention to details

PREREQUISITE:

- MATH 130, 138 or MATH& 141 with a C or better
- Intermediate computer skills and prior experience with Word, Excel and PowerPoint are required.

BOOKS AND MATERIALS REQUIRED:

Textbook: Business Analytics, by James R. Evans, 2nd edition, Pearson

Software: Excel 2010 or newer

TOPICS COVERED:

| | |
|------------|--|
| Chapter 1 | Introduction to Business Analytics |
| Chapter 2 | Analytics on Spreadsheets |
| Chapter 3 | Visualizing and Exploring Data |
| Chapter 4 | Descriptive Statistical Measures |
| Chapter 5 | Probability Distributions and Data modeling |
| Chapter 6 | Sampling and Estimation |
| Chapter 7 | Statistical inference |
| Chapter 8 | Trendlines and Regression Analysis |
| Chapter 9 | Forecasting Techniques |
| Chapter 10 | Introduction to Data Mining (depends on time availability) |
| Chapter 11 | Spreadsheet Modeling and Analysis (depends on time availability) |

COURSE REQUIREMENT

THIS IS A TIGHTLY-SCHEDULED AND FAST-PACED COURSE. THE LATER MATERIALS ARE BUILT ON TOP OF THE PREVIOUS MATERIALS AND GET HARDER AND HARDER. WE NEARLY HAVE NO TIME TO TAKE A BREAK OR REVISIT THE MATERIALS – IT IS VERY HARD TO CATCH UP IF YOU SLACK OFF.

An online class does not reduce any course requirements. Instead, it only offers you the flexibility of creating your own learning schedule. Make sure you manage your time well!!

We cover about 2 chapters a week on average for the first couple of weeks, and then slow down to about 1 chapter a week as the materials get much harder after Chapter 6. The last couple of weeks will be very busy with the project. See “Recommended Study Schedule” for details.

All due dates are posted under Canvas Calendar (some are subject to change). Students will not be given extension(s) unless they have extenuating circumstances as decided by the instructor, and students must contact the instructor 48 hours before the due date to make such arrangements.

There is a significant amount of work in this class. You can expect to spend a minimum of 15 hours per week to study and to complete the assigned work. Make sure that you can spend at least that much time this quarter. *If you are overloaded with other courses or work, this may NOT be the right time for you to take this class. FOR YOUR BENEFIT, DO NOT OVERLOAD.*

You are expected to read the course documents, textbook, books 24x7, tutors and Web resources, and use the discussion and chat tool to seek assistance from classmates and the instructor. DO NOT post files that are assigned as homework to the discussion area unless specifically directed to do so.

Check Course Website Frequently! Course Documents (including but not limited to Syllabus, Schedule, Lecture Notes, Homework Solution, Project Information, and Announcements) will be posted regularly.

GRADING COMPONENTS:

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|---------------------------|------------------|
| Attendance: | 50 hours minimum |
| Assignments: | 40% |
| Quizzes: | 30% |
| Discussions: | 10% |
| Project and Presentation: | 20% |
| Total | 100% |

ATTENDANCE (50 HOURS MINIMUM)

This class requires 50 hours minimum attendance on Canvas. This includes but is not limited to reading the course documents, spending on discussions, using email and chat. In particular, you are required to attend **at least TWO** study sessions/conferences, and one must be completed **by the end of week 3 of the quarter**.

Note: you must sign up at least 72 hours before the session. See Course Tools People → Groups for sign-up sheet.

ASSIGNMENTS (40% OF THE GRADE)

There are assigned problems in every chapter. You may find the assigned problems in course modules.

Files sent to the instructor need to be named appropriately, as I need to track thousands of submissions every year. Typical format: **DA310_AssignmentXX_XXXXX.xxxx** where the first XX is the Assignment #, XXXXX is the First Five letters of your Last Name, and xxxx is the document format. Assuming I'm turning Assignment 8, which is a Word document (using office 2010 or newer), then I should name the file as: **DA310_Assignment08_Li.docx** (as I have a short last name :).

Please note:

1. Since this textbook is the 2nd edition, I have noticed number of small errors in both the textbook and the solution manual. **I have corrected as many errors as I could in the lecture notes, make sure you treat lecture notes as the "model" if there are any "conflicts" between the textbook and the lecture notes.** Also, please feel free to let me know if you notice any other errors (in either the textbook or the lecture notes).
2. **DO NOT expect to start reading the materials on the due date and still be able to finish the assignment on time.** Although the reading time for each chapter takes about an hour or two, it may take many hours to understand the materials fully, particularly after Chapter 6. Please see "recommended Study Schedule" for details (posted in Getting Started folder). **Make sure you manage your time well.**
3. **Assignments are focused on hands-on applications.** While they are related to the concepts in the textbook and lecture notes, you most likely won't find the detailed step-by-step instructions on how to complete each problems. ***To succeed in this area, you need to hone your skills of searching and utilizing all resources available, including (but not limited to) class materials, discussion board, online Q&A sessions, tutoring sessions, and internet search.***
4. Of special concern for an online course is the fact that we do not exchange paper. **So it is particularly important to follow directions.** One of my biggest problems (and thus yours) is with students who already know exactly what to do, so they miss many subtle points of what I ask to be done in assignments. Again, please follow directions on each assignment.

You may either hand write or type your homework. If you choose to hand write, scan your work or take picture(s) of your work when you complete it by hand (**please make sure the resolution is CLEAR enough**). Then **insert all images into a single Word Document**, and you should submit only **ONE file** if there's no additional requirement. All assignments should be submitted through Course Tools → Assignments.

Many assignments require the usage of Excel. In this case, **please submit your complete Excel workbook**. If an assignment asks you to include a **SKETCH** or a **DIAGRAM** as part of your answer, **please do so**. Failure of including required Excel workbook / diagrams will result in an automatic **loss of 50% of the credit** for that problem. **Diagrams do not need to be elaborate—a program like paint (or hand drawing) produces perfectly “adequate” graphics for these assignments.**

QUIZ (30% OF THE GRADE)

Quizzes must be taken at scheduled times, which is usually a couple days after the assignment due date. Quiz questions are usually in the following formats: multiple choices, true/false, fill in blanks and short answers, and may require the use of Excel. Each quiz is worth 10-20 points, and is limited to 30-60 minutes. In addition, you will have a Quiz 0, which is about syllabus and general course information.

Note: No late/make-up quizzes are allowed.

DISCUSSION (10% OF THE GRADE)

For each assignment, there will be a follow-up discussion: pick ONE question from the homework assignment (the one you are mostly interested in), write a short paragraph to explain 1) why you are interested in it, 2) how did you approach this question, solve it, and overcome any difficulties you had, and 3) what have you learned from this question and any comments. Alternatively, you may also choose the other option, create your own problem based on what you have learned in that chapter! ☺ You are also required to interact with your classmates – reply to at least two other students’ posts. **Don’t hold until the last minute, post as early as you could! This is an effective way to check your understanding on the materials and reviewing the homework assignments.** In addition, you have the very first discussion (Discussion 0) for self-introduction.

Note: No late discussion posts will be accepted.

PROJECT AND PRESENTATION (20% OF THE GRADE)

Project is individual work, which includes the following parts. Detailed instruction will usually be available by week 7 of the quarter and will be posted in **Modules → Project**.

- 1) **Select Data:** Select a data set from available sources. Clean up the data and make it ready for analysis.
- 2) **Descriptive Statistics:** Complete a basic descriptive statistics analysis for each variable using EXCEL.
- 3) **Modeling Report:** Apply the most suitable data analysis technique, complete the modeling analysis using EXCEL, and write a comprehensive report. **Note: No late report will be accepted.**
- 4) **Oral Presentation:** Pick a presentation day (usually in Week 11), translate your report to a PowerPoint Presentation, and present to the audience (peers and instructors). Sign-up sheet will be posted by Week 3 of the quarter.
- 5) **Peer Evaluation:** Complete the peer evaluation forms.

GRADING POLICY

Individual assignments are graded on a scale of 100% with the following concepts:

- 1) **Work / Effort:** 20% for proper submission of something on time
- 2) **Correctness:** 70% for
 - any resemblance of a correct solution
 - demonstrating true understanding the problem at hand
 - for accurate results as required by the problem and the directions

Yes, 90% (out of 100%) means all done accurately
- 3) **Professionalism / Neatness:** 10% for well-organized work, good formatting, nice labels, etc...
Note: this can be subjective

Lateness: Any work received after the due date are considered late. **Late work will be penalized at the rate of FIVE (5) points per calendar day late** (including weekends and holidays) for a maximum of **THREE (3) calendar days**. Students will not be given extensions unless they have extenuating circumstances as decided by the instructor (you must contact me **48 hours before** the due date to make such arrangements).

Since extreme circumstances do occur in everyone's life, each student gets a total of **3 FREE late days**:

- 1) A free late day allows you to submit an assignment up to 24 hours late without penalty. For example, you could submit an assignment due Tuesday 9pm on Wednesday by 9pm with no penalty by spending 1 free late day.
- 2) You may choose to use the late days in any way you desire. For example, you could use 2 late days on Assignment 2 and 1 late day on Assignment 5, or spending all 3 on Assignment 7.
- 3) Late days are counted by **CALENDAR DAY**, each late day may only apply to **ONE assignment**, and may **ONLY** be used on homework assignments (**NOT applicable on quizzes, discussions or project**).
- 4) Once a student has used up all 3 free late days, normal late penalty applies.
Note: If you would like to use your free late days, please add a note along with the assignment submission. For example, put down "I would like to use one of my three free late days" under submission comment.
- 5) **NO credit** will be given after the homework solution has posted, regardless how many free late days you have left.

Resubmission: **Students are solely responsible on the assignment submission.** You may take back the assignment and resubmit it **BEFORE** the due date with no penalty. If you would like to resubmit an assignment **AFTER** the due date due to whatever reason (i.e., wrong file, updated work etc.), free late days will be taken off if you have any left, and normal late penalty applies if all free late days have been used up. **It is always a good idea to DOUBLE CHECK your submission.**

Final Grade is given based on:

| | | |
|-----------|----|-----|
| 93 – 100% | A | 4 |
| 90 – <93 | A- | 3.7 |

| | | |
|----------|----|-----|
| 87 – <90 | B+ | 3.3 |
| 83 – <87 | B | 3.0 |
| 80 – <83 | B- | 2.7 |
| 77 – <80 | C+ | 2.3 |
| 73 – <77 | C | 2.0 |
| 70 – <73 | C- | 1.7 |
| 67 – <70 | D+ | 1.3 |
| 60 – <67 | D | 1.0 |
| Below 60 | F | 0 |

Note 1: A passing grade will not be given unless ALL REQUIREMENTS of the course are completed.

Note 2: In order to be fair to everyone, NO GRADE NEGOTIATION!!!

INSTRUCTOR'S EXPECTATION

My role as the instructor is to:

- Help students succeed in this course
- Share my knowledge and experiences to help expand on concepts discussed in the course
- Provide timely feedback to students
- Moderate discussions and challenge students to further their knowledge
- Evaluate and grade students

As a student in this course, I expect you to:

- Work hard to achieve the goals of the course
- Actively contribute to any discussions
- Share your thoughts, knowledge and experiences
- Cooperate and collaborate with other students
- Provide feedback to me throughout the course

OTHER INFORMATION

AFFIRMATION OF INCLUSION

Bellevue College is committed to maintaining an environment in which every member of the campus community feels welcome to participate in the life of the college, free from harassment and discrimination.

We value our different backgrounds at Bellevue College, and students, faculty, staff members, and administrators are to treat one another with dignity and respect. <http://bellevuecollege.edu/about/goals/inclusion.asp>

STUDENT CODE OF CONDUCT AND ACADEMIC INTEGRITY

Cheating, stealing, and plagiarizing (using the ideas or words of another as one's own without crediting the source) and inappropriate/disruptive classroom behavior are violations of the Student Code of Conduct at Bellevue College. Examples of unacceptable behavior include, but are not limited to, talking out of turn, arriving late or leaving early without a valid reason, allowing cell phones/pagers to ring, and inappropriate behavior toward the instructor or classmates. The instructor can refer any violation of the Student Code of Conduct to the Dean of Student Success for investigation. Specific student rights, responsibilities, and appeal procedures are listed in the Student Code of Conduct at: <http://www.bellevuecollege.edu/policies/id-2050/>

Students are also required to follow the ***Netiquette Guide for Online Course*** (posted in Getting Started module). First time violation will result warning from the instructor, and further violations will be reported to the dean and the Student Conduct Officer.

BELLEVUE COLLEGE E-MAIL AND ACCESS TO MYBC

All students registered for classes at Bellevue College are entitled to a network and e-mail account. Your student network account can be used to access your student e-mail, log in to computers in labs and classrooms, connect to the BC wireless network and log in to MyBC. To create your account, go to: <https://www.bellevuecollege.edu/netid/>.

BC offers a wide variety of computer and learning labs to enhance learning and student success. Find current campus locations for all student labs by visiting the <http://depts.bellevuecollege.edu/helpdesk/students/>

DISABILITY RESOURCE CENTER (DRC)

The Disability Resource Center serves students with a wide array of learning challenges and disabilities. If you are a student who has a disability or learning challenge for which you have documentation or have seen someone for treatment and if you feel you may need accommodations in order to be successful in college, please contact us as soon as possible.

If you are a person who requires assistance in case of an emergency situation, such as a fire, earthquake, etc., please meet with your individual instructors to develop a safety plan within the first week of the quarter.

If you are a student with a documented autism spectrum disorder, there is an additional access program available to you. Contact asn@bellevuecollege.edu or 425.564.2764. ASN is located in the Library Media Center in D125. www.bellevuecollege.edu/autismspectrumnavigators/

The DRC office is located in B132 or you can call our reception desk at 425.564.2498. Deaf students can reach us by video phone at 425-440-2025 or by TTY at 425-564-4110. Please visit our website for application information into our program and other helpful links at www.bellevuecollege.edu/drc

PUBLIC SAFETY AND EMERGENCIES

Public Safety is located in the K building and can be reached at **425-564-2400** (easy to remember because it's the only office on campus open 24 hours a day—2400). Among other things, Public Safety serves as our Parking Permits, Lost and Found, and Emergency Notification center. Please ensure you are signed up to receive alerts through our campus alerting system by registering at <http://www.bellevuecollege.edu/alerts/?ref=footer>

If you work late and are uneasy about going to your car, Public Safety will escort you to your vehicle. To coordinate this, please phone ahead and let Public Safety know when and where you will need an escort.

Please familiarize yourself with the emergency postings by the door of every classroom and know where to go in the event of an evacuation. Your instructor will be asked if anyone might still be in the building, so check in before you do anything else. Emergency responders will search for anyone unaccounted for.

If a major emergency occurs, please follow these two rules:

- 1)** Take directions from those in charge of the response -We all need to be working together.
- 2)** Do not get in your car and leave campus (unless directed to) - Doing so will clog streets and prevent emergency vehicles from entering the scene. Instead, follow directions from those in charge.

Please do not hesitate to call Public Safety if you feel safety questions or concerns at any time.

ACADEMIC CALENDAR

Please see Recommended Study Schedule and/or Canvas Calendar for details.