# Course Syllabus

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| **Course** | OPRE 3333.006 |
| **Course Title** | Quantitative Business Analysis |
| **Professor** | Monica Brussolo, PhD |
| **Term** | Fall 2020 |
| **Meetings** | Thursday 10 am to 12:45 pm<br>Room JSOM 1.212 |

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## Professor's Contact Information

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| **Office Phone** | 972-883-4411 |
| **Office Location** | JSOM 13.209 |
| **Email Address** | monica.brussolo@utdallas.edu |
| **Office Hours** | Virtual on Teams – Monday & Thursday 2-4 pm starting 08/24 |
| **Other Information** | Email is the best way to communicate during the semester |
| **T.A. Information** | Katalia (Qiuxia) Chen - Qiuxia.Chen@utdallas.edu<br>Virtual Office hours - Wednesday 3-5 pm in Teams starting 08/26 |

## Course Modality and Expectations

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| **Instructional Mode** | Traditional (#1) |
| **Course Platform** | Class will be delivered in the classroom, students are expected to arrive to class on time, and the professor will conduct the class and record it in Microsoft Teams. A link will be provided on eLearning to get to the class meeting. For asynchronous access to the materials, class videos will be posted within 24 to 48 hours after the class is conducted. |
| **Expectations** | Students must attend class time and participate. For you to get the best out of the class, you should take advantage of the class time and ask questions as we go. I expect students to conduct themselves with responsibility and class decorum during our weekly meetings. |
| **Asynchronous Learning Guidelines** | If you decide to attend the class asynchronous, that means, not attending during class time, and reviewieng the videos and materials on your own, you need to inform me by August 26th by sending me an email. Also, if during the course of the semester you need to switch to an asynchronous setting, you need to email me and I can approve it.<br>https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/ |

**COVID-19 Guidelines and Resources**

The information contained in the link lists the University's COVID-19 resources for students and instructors of record.

Please see http://go.utdallas.edu/syllabus-policies

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**Classroom Conduct Requirements Related to COVID-19**

UT Dallas requires that all students must wear a face covering that covers the nose and mouth in all university buildings and classrooms. To help protect the health and safety of students, instructors, and the University community, students who choose not to wear a face covering may not attend class in person but may attend a course remotely. Anyone attending class in person without a face covering will be asked to put one on or leave. Instructors may end the class if anyone present refuses to appropriately wear a face covering for the duration of class. Students should also be sure they are at least six feet away from their fellow students and faculty, and seated in a seat that is designated to ensure that distance. Students who either refuse to wear face coverings appropriately or to adhere to other social distancing protocols may face disciplinary action for Student Code of Conduct violations. Students who are unable to comply with the university policies including wearing a face covering should consult the Comets United webpage for further instructions.

Students who have tested positive for COVID-19 or may have been exposed should not attend class in person and should instead follow required disclosure notifications as posted on the university's website (see "What should I do if I become sick?" webpage)

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**Class Attendance**

Regular and punctual class attendance is expected regardless of modality. As we will have quizzes during class time, it is expected for you to attend and take them during class time. Only students registered in the asynchronous modality will have alternative work to make up the quiz points.

In-person participation records may be used to assist the University or local public health authorities in performing COVID-19 occurrence monitoring. Please note – in-person attendance requires consistently adhering to University requirements, including wearing a face covering and other public safety requirements related to COVID-19, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

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**Class Participation**

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class (quizzes). It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures. Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

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**Class Recordings**

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

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**Class Materials**

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

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| **Pre-requisites, Co-requisites, & other restrictions** | OPRE 3333 and MATH 2333 cannot both be used to fulfill degree requirements. Prerequisite: MATH 1325 Applied Calculus I, MATH 2413 Differential Calculus or MATH 2417 Calculus I. The topics discussed in this course are inherently mathematical. Students are encouraged to explore supplementary resources early on the semester as needed. |
| **Course Description** | Provides students with the analytical tools necessary for making better management decisions. Students are introduced to mathematical techniques used to make different types of business decisions. |
| **Learning Outcomes** | Students are required to take the initiative to learn, understand and apply quantitative business analytics to real world business data. At the end of this course you should:<br>• Be able to apply mathematical techniques of optimization and linear algebra<br>• Be able to effectively understand and interpret analytic models and use them in the decision-making process<br>• Be able to utilize basic business analytics tools in Excel |
| **Suggested Texts, Readings, & Materials** | **For Module 1:**<br>Elementary Linear Algebra (8th edition) –Larson<br>ISBN-13: 978-1305658004<br>ISBN-10: 1305658000<br>https://www.cengage.com/c/elementary-linear-algebra-8e-larson/9781305658004PF/?filterBy=Student<br>Rental price for e-book for the semester: $34.49<br>**For Module 2 and 3:**<br>Essentials of Business Analytics (2nd edition)<br>Camm/Fry/Anderson/Sweeney/Williams<br>ISBN-13: 978-1305627734<br>ISBN-10: 1305627733<br>https://www.cengage.com/c/essentials-of-business-analytics-2e-camm/9781305627734/<br>Rental price for e-book for the semester: $36.49<br><br>I will provide the class with examples for the topics covered in the syllabus, but the books include more exercises and explanations that can be useful for you to succeed in the class, especially in this remote setting. If you have to get only one of the books, I recommend you to get a copy of the Essentials of Business Analytics as it contains useful and applicable material for other courses. |

**Assignments & Academic Calendar**

| Weeks and Due Dates | Topics, Activities and Due Dates |
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| | **Module 1** |
| *Week 1 – Aug 20* | Introduction and syllabus discussion.<br>System of Linear Equations – Chapter 1 (Larson) |
| *Week 2 – Aug 27*<br>Due Dates on:<br>08/30 at 11:59 pm | System of Linear Equations – Chapter 1 (Larson)<br>Matrices – Chapter 2 (Larson)<br>*Homework 1 – due on August 30th at 11:59 pm on eLearning.* |
| *Week 3 – Sept 3* | Matrices – Chapter 2 (Larson)<br>Determinants – Chapter 3 (Larson) |
| *Week 4 –Sept 10*<br>Due Dates on:<br>09/13 at 11:59 pm | Determinants – Chapter 3 (Larson)<br>*Homework 2 – due on September 13th at 11:59 pm on eLearning.* |
| *Week 5 – Sept 17*<br>Due Date on:<br>09/17 @ 11:59 pm<br>Exam date on:<br>09/19 @ 9 am to 12 pm | Exam 1 material wrap-up session<br>Practice Problems Exam 1 – due on Thursday 09/17 to work during class time and to be delivered at the end of the day.<br>**MODULE 1 EXAM: Chapters 1,2,3 – September 19th (Saturday) Open notes and open books – 80 minutes**<br>Exam is open from 9 am to 12 pm on eLearning.<br>You need a webcam for the exam and being in a place without distractions. More instructions about the exam will be given the week before the exam on eLearning.<br>It is expected that every student will take the exam during this window of time, if you have a documented work or school related scheduling conflict, you need to inform me **at least a week** in advanced. |
| | **Module 2** |
| *Week 6 – Sept 24* | Introduction to Business Analytics – Chapter 1 (Camm)<br>Data Visualization – Chapter 3 (Camm) |
| *Week 7 – Oct 1*<br>Due Dates on:<br>10/04 at 11:59 pm | Time Series Analysis and Forecasting - Chapter 8 (Camm)<br>*Homework 3 – due on October 4th at 11:59 pm on eLearning.* |
| *Week 8 – Oct 8* | Linear Optimization Models - Chapter 11 (Camm)<br>Problem formulation and graphical techniques (parts a&b) |
| *Week 9 – Oct 15*<br>Due Date on:<br>10/18 at 11:59 pm | Using Excel Solver for Optimization (part c)<br>*Homework 4 – due on October 18h at 11:59 pm on eLearning.* |
| *Week 10 – Oct 22*<br>Due Date on:<br>10/22 @ 11:59 pm<br>Exam date on: | Exam 2 material wrap-up session<br>Practice Problems Exam 2 – due on Thursday 10/22 to work during class time and to be delivered at the end of the day. |

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| 10/24 @ 9 am to 12 pm | **MODULE 2 EXAM: Chapters 1,3,8,11 (part a,b,c)– October 24th (Saturday) Open notes and open books – 80 minutes**<br>Exam is open from 9 am to 12 pm on eLearning.<br>You need a webcam for the exam and being in a place without distractions. More instructions about the exam will be given the week before the exam on eLearning.<br>It is expected that every student will take the exam during this window of time, if you have a documented work or school related scheduling conflict, you need to inform me **at least a week** in advanced. |
| | **Module 3** |
| *Week 11 – Oct 29* | Special case of Linear Programming (Chapter 11 - part d)<br>Excel Solver for Network Problems |
| *Week 12 – Nov 5*<br>Due Dates on:<br>11/08 at 11:59 pm | Integer Linear Optimization - Chapter 12 (Camm)<br>Nonlinear Optimization Models (Lagrange Multipliers)– Chapter 13 (Camm)<br>*Homework 5 – due on November 8th at 11:59 pm on eLearning.* |
| *Week 13 – Nov 12*<br>Due Dates on:<br>11/15 at 11:59 pm | Decision Analysis - Chapter 15 (Camm)<br>*Homework 6 – due on November 15th at 11:59 pm on eLearning.* |
| *Week 14 – Nov 19*<br>Due Dates on:<br>11/19 at 11:59 pm<br>Exam Date on:<br>11/21 @ 9 am to 12 pm | Exam 3 material wrap-up session/Monday<br>Practice Problems Exam 3 – due on Thursday 11/19 to work during class time and to be delivered at the end of the day.<br>**MODULE 3 EXAM: Chapters 11 (part d), 12, 13, 15– November 21th (Saturday) Open notes and open books – 80 minutes**<br>Exam is open from 9 am to 12 pm on eLearning.<br>You need a webcam for the exam and being in a place without distractions. More instructions about the exam will be given the week before the exam on eLearning.<br>It is expected that every student will take the exam during this window of time, if you have a documented work or school related scheduling conflict, you need to inform me **at least a week** in advanced. |
| *Week 15 – Nov 26* | Thanksgiving- Enjoy the break |
| *Week 16 – Dec 3* | No final exam – semester is over |

**Course Policies**

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| **Grading (credit) Criteria** | 3 exams (68% of final grade) on eLearning.<br>Exam 1, 2 – 22% (each)<br>Exam 3– 24%<br>The exams will be given on Saturdays of the respective week (see calendar above). If you have a recurrent scheduling conflict, I need to know about it by August 26th by email. For unexpected changes due to your job schedule, you need to inform me a week in advanced or no changes will be made.<br>This course will use Honorlock – an online exam proctoring tool. To successfully take an exam, you must have a web camera with microphone, a laptop or desktop computer (no tablets/phones), Chrome browser, a reliable internet connection and your photo ID. You will be prompted to install the Honorlock Chrome Extension (which you can remove after you finish the test). You will then access the exam within your eLearning course and go through the authentication process. The web camera will monitor you throughout your test. Please see the Testing Guidelines and Support Information for additional information.<br>6 homeworks posted and submit in eLearning, the lowest grade will be dropped (3% each, 15% total). Proof of the work done to solve the problems (handwritten work, excel file, word file) needs to be attached to the homework with sufficient work for the homework grade to be recorded. If no evidence is added to the homework, the homework won't be graded and you will receive a zero. This work must be submitted as an attachment in the last question of the homework to count, so do not submit your backup work by email and/or late, I can't keep track of it.<br>3 Exam practice problems sets (4% each, 12% total) due on Thursday of the exam's week.<br>6 pop quizzes (top 5 grades count – 5%) will be given during class time to encourage participation and attendance. There are 2 quizzes per each Module without a fixed date, so plan ahead. For those students who requested asynchronous learning, alternative work will be given to cover these in-class quizzes.<br><br>97-100 points = A+; 93-96.9 points = A; 90-92.9 points = A-<br>87-89.9 points = B+; 83-86.9 points = B; 80-82.9 points = B-<br>77-79.9 points = C+; 73-76.9 points = C; 70-72.9 points = C-<br>67-69.9 points = D+; 63-66.9 points = D; 60-62.9 points = D- (Passing grades)<br>Below 60 = F |

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| | 22% Exam 1<br>22% Exam 2<br>24% Exam 3<br>15% Homeworks - Best 5 out of 6 (on eLearning)<br>12% Practice Sets – 3 sets<br>5% In-class pop quizzes – Best 5 out of 6<br>100% Total |
| **Make-up Exams** | Make-up exams will be given only for justified situations; discuss it with the instructor. Students who does not connect the day of the exam and takes the exam, and have not made alternative arrangements for the exam with the instructor, will get a zero. |
| **Extra Credit** | No extra credit is given in this class. |
| **Late Work** | Homeworks and Practice problems will be posted a week in advance of their due date. You can work together on assignments but develop your own solution.<br>**LATE SUBMISSIONS WILL NOT BE ACCEPTED**. All homeworks and practice sets should be submitted on the due day. No make-up assignments |
| **Class Attendance** | Attendance is expected and recorded. No efforts will be made to provide help to explain the material to students who are missing the class for not justified reason. |
| **Classroom Citizenship** | We expect students to conduct politely and maintain class decorum. Respect other opinions and do not engage in online or off-line unacceptable communication. |
| **Comet Creed** | *This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:*<br>*"As a Comet, I pledge honesty, integrity, and service in all that I do."* |
| **Academic Support Resources** | *The information contained in the following link lists the University's academic support resources for all students.*<br>*Please go to http://go.utdallas.edu/academic-support-resources.* |
| **UT Dallas Syllabus Policies and Procedures** | *The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.*<br>*Please go to http://go.utdallas.edu/syllabus-policies for these policies.* |

*The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.*