



OPRE 4350 – Spreadsheet Modeling and Analytics

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| Term | Fall 2016 |
| Classroom | JSOM 12.222 |
| Time | Tuesday 7:00pm - 9:45pm |
| Instructor | Prof. Shouqiang Wang |
| Office | JSOM 13.215 |
| Phone | (972)883-5093 |
| Email | <i>Shouqiang.Wang@utdallas.edu</i> |
| Office Hour | Friday 9:00am – 11:30pm, or by appointment |

Course Description

This course develops advanced ability to use quantitative methods and software (particularly spreadsheet) to build effective models with analytical views for decision making in areas such as finance, marketing and operations. Topics include: basic classification and prediction techniques, decision trees, Monte Carlo simulations, and optimizations. This course uses Microsoft Excel in conjunction with the Analytic Solver Platform as the model environment to implement the applications of those concepts and techniques.

Prerequisite: OPRE 3333 and OPRE 3360.

Format

This course will mainly use lectures, which will involve example problem-solving, computer demonstrations, in-class exercises/discussions, individual homework assignments, review sessions as well as tests and exams. To effectively master the material in this course, you must “roll up your sleeves” and work on problems, including the examples and some of end-of-chapter exercises in the text.

Student Learning Outcomes

Students are expected to develop quantitative and analytical skills on problem formulation, identification of appropriate methodologies and techniques, computer implementations in Excel and/or manual calculations, and interpretation of results. More specifically, the students will be able to

1. Acquire basic knowledge of commonly used analytic tools in processing quantitative information and making quantitative business decisions
2. Recognize and formulate business problems in Excel spreadsheets
3. Evaluate or solve Excel spreadsheet models using professional softwares (e.g., Analytical Solver Platform)
4. Inform managers with key insights from the solutions
5. Apply the concepts and techniques to real-world business situations
6. Effectively present and communicate the analysis

Course Materials

Required Textbook. Custom-selected course pack “OPRE 4350 - Spreadsheet Modeling and Analytics” from Wiley. You can find the printed textbook in UTD bookstore (ISBN 13 digit: 9781119352853 / ISBN 10 digit: 1119352851). You can also choose to purchase the electronic version through <http://store.vitalsource.com/show/9781119352853> (ISBN 13 digit: 9781119352853 / ISBN 10 digit: 1119352851).

Recommended Reading. The course pack consists of selected chapters from **Management Science: The Art of Modeling with Spreadsheets** (4th Ed.), by Stephen G. Powell and Kenneth R. Baker, also from Wiley (ISBN 13 digit: 9780470038406 / ISBN 10 digit: 0470038403). If you choose to purchase this book, then you do not need to purchase the course pack. This book is also placed on reserve in the university library for you to check out (Call number: HF5548.2 .P654 2014).

eLearning. Excel Workbooks utilized in lectures, lecture slides and other supplementary notes will be provided for download via your eLearning class website. *In particular, a handout-version of the lecture slides will be made available before class and students are encouraged to preview, print out, and bring the slides to class to take additional notes.* Students are responsible to check eLearning course website regularly for any updates.

Technical Support. UT Dallas provides eLearning technical support 24 hours a day/7 days a week. The services include a toll free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service. Please use this link to access the UTD eLearning Support Center: <http://www.utdallas.edu/elearninghelp>. If you experience any issues with your UT Dallas account, contact the UT Dallas Information Resources Help Desk: assist@utdallas.edu or call 972-883-2911.

Computer and Software. I will use Microsoft Excel 2016 in Windows 10 environment for all the in-class demonstrations, in conjunction with **Analytic Solver Platform (ASP)**, an add-in software in Excel, which comes free with the purchase of the textbook. The students are expected to have access to Microsoft Excel 2010 or higher on **Windows** computers – **ASP will not run on Mac machines**. Please follow the step-by-step instructions posted on eLearning course web site to obtain and install ASP. There is also advise on how to install Windows on your Mac machines. Note that the PCs in JSOM lab have no ASP installed, so you have to have access to Windows on your personal computers in order to run ASP. Please be aware that the instructor have very limited resources to resolve your technical problems regarding this issue.

Communication

Email will be the main channel for all communications outside of the classroom. Important announcements will be distributed via email. It is the students’ responsibility to read and recognize all the email communications. **Only emails originated from students’ UTD email accounts will be responded. To ensure my timely response, please do not use your other personal email accounts (e.g., Gmail, Hotmail, etc.) and please include “OPRE 4350” in the subject line of your email.** For complicated questions/comments that are difficult to explain via email, I encourage you to see me in the office hour.

Email Use. The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. All official student email correspondence will be sent only to a student’s UT Dallas email address and UT Dallas will only consider email requests originating from an official UT Dallas student email account. This allows the University to

maintain a high degree of confidence in the identity of each individual's corresponding via email and the security of the transmitted information. The University of Texas at Dallas furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources provides a method for students to have their UT Dallas mail forwarded to other email accounts. To activate a student UT Dallas computer account and forward email to another account, go to <http://netid.utdallas.edu>.

Expectation

An important objective of undergraduate management education is to reinforce what is appropriate behavior in a business setting. The expectations in this class are consistent with what will be required of you in the professional world and include, but are not limited to: attendance, timeliness, paying attention to classroom activities, adequate preparation, and appropriate standards of work quality, as well as individual participation and contribution.

Attendance Policy

Due to the nature of course content, **attendance to every class is mandatory and will be audited for each student**. Your attendance record will be reflected into your participation grades (see below). If you have to be absent due to legitimate reasons, it is your responsibility to follow the due process according to the pertinent university policies (see below) or notify the instructor at least **48 hours** ahead of time to avoid credit loss. Constant absence to the class will not be excused.

In Case of Emergency. Class cancellation is determined by the university. Students should wait no more than 30 minutes in any case that I am delayed or fail to show up in the classroom. You will not be punished if there is homework due at the beginning of that class. The course schedule will be shifted sequentially.

Religious Holidays. The University of Texas at Dallas will excuse a student from class or other required activities, including examinations and travel time for the observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, of the Texas Tax Code. Students are encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. Excused students will be allowed to take missed exams or complete assignments within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence (i.e., for the purpose of observing a religious holy day) or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the President of UT Dallas or from the President's designee. The chief executive officer or designee must take into account the legislative intent of Texas Education Code 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Class Citizenship

- Class begins on time. **Students are responsible for announcements and activities (and their consequences) that they miss for being late to the class.**

- Please bring your **nameplates** in every class.
- Please maintain class decorum and be respectful toward fellow students in the class. You should minimize the distractions of any form to other students in the classroom.
- Using your phone during class is not permitted and is rude. Keep your phone on silent at all times and away from your desk. This includes no texting. Offenders will be asked to turn off their phones. If this is a recurring problem students will be asked to give their phones to the instructor and will be returned at the end of the class session.
- Laptop computer policy: using designated software on laptops and accessing course materials on eLearning course web site are the **only** permitted computer activities in class. All other features and their usage (such as e-mail, facebook, games, instant messaging and etc.) are regarded as class disruptions and are **strictly prohibited** in class.

Tips for Success

1. Read the relevant textbook chapters before a new class begins, and then review again after the lectures. You can find the lecture schedule/contents at the end of this syllabus.
2. Be an active participant during lectures.
3. Ask questions – during class or office hours, or by email.
4. Do the homework – start early and make sure you attempt and understand all questions.
5. Work with your classmates – a mutual learning environment is encouraged and will help you learn faster!
6. Do not procrastinate – don't let a week go by with unanswered questions as it will just make the following week's material even more difficult to follow.

Grading Policy

The total score in this course is 100 points, which will be made up of the following components:

Participation (16%) The percentage of classes attended will largely determine your participation grades. Minor adjustment will be made based on your overall in-class performance during the entire semester.

Homework Assignments (24%). There are totally 6 graded homework assignments, each of which is worth 4% of your total score. The homework assignments will be distributed on the eLearning course website **10 days** before the due date and should be handed in **at the beginning of the classes on the due dates** listed on the schedule attached to this syllabus. Most homework assignments require Excel modeling and **each student should submit their Excel spreadsheet on eLearning before the beginning of the classes on the due dates.** You may discuss the homework with your classmates. But each student must hand in their own write-up, which should be neatly hand-written or typed with all the essential reasoning/derivations included. Note: by “your own write-up,” we mean that you cannot turn in a write-up that share more than 40% similarities on any single question with those of your peers. If you have to miss the class where the homework is due, you should hand in your homework ahead of time (either electronically or in person); otherwise, it is counted as late submission. **No make-up assignments will be provided.** Late homework assignments are accepted subject to the following penalties:

- Late but before the class ends: lose 15% of points

- After the class but still on due date: lose 25% of points
- Next day: lose 50% of points
- Later than next day: lose all points.

Graded homework assignments will NOT be returned to students but will be reviewed during the review sessions. Students can also review their homework assignments during office hours.

Mid-Term Exams (30%) There are two mid-term exams, each worth 15% of your total grades. All exams are noncumulative closed-book, closed-note, in-class, paper-based exams. **Each student is ONLY allowed to bring one-page (11 × 8.5”) handwritten and one-sided cheat sheet as well as a calculator to the exams.** Depending on the nature of the exams, students may be asked to prepare Scantron test forms. These tests are absolutely **individual** assessments and no discussions/collaborations among peers are allowed. The dates are indicated in the course schedule. There will be **NO make-up** exams. If you have to miss any exam due to legitimate excuses, please notify the instructor at least 72 hours before the test to make special arrangement. Graded mid-term exams will NOT be returned to students, but will be reviewed during the last review session.

Take-Home Final (30%) There will be a 72-hour take-home final exam covering the material from the entire course. The exam will be open book, open notes, and will require the use of a computer. The write-ups need to be typed with your Excel spreadsheets attached.

Grades for all the assignments and exams will be posted on eLearning individually after they are graded. The grading is done either by myself or by TA. In either case, the grading policy is not a matter of strictness or looseness, instead, is to emphasize and keep consistency and maintain fairness across all the students. **Any challenges to grading must be made, in writing (hard copy, no emails), with justification, within 3 days of the grade being posted in eLearning.** I will not discuss grades in class; please see me during office hours.

The instructor reserves the right (but does not commit) to adjust the final total scores. Your final letter grade will be assigned based on your total score according to the following distribution:

| Letter grade | A+ | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | F |
|--------------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------|
| Points | ≥ 97 | [93, 97) | [90, 93) | [87, 90) | [83, 87) | [80, 83) | [77, 80) | [73, 77) | [70, 73) | [67, 70) | [63, 67) | [60, 63) | < 60 |

A serious note: *Your grade will be based on your performance in the class just as your promotion or demotion at work is based on your performance there. Please do not ask me to give a special treatment to you (give extra credit work or bump your grade) for any reason whatsoever as I do not ever comply with such requests. Also, please keep in mind, there will always be someone who'll miss the next higher grade by “just a little bit.” It is unfortunate, but that is how it works.*

Withdrawal from the Class

The administration at UT Dallas has established deadlines for withdrawal from any course. These dates and times are published in the Comet Calendar (<http://www.utdallas.edu/calendar>) and in the Academic Calendar (<http://www.utdallas.edu/academiccalendar>). It is the student's responsibility to handle withdrawal requirements from any class. In other words, a professor or other instructor cannot drop or withdraw any student unless there is an administrative drop such as the following:

- Have not met the prerequisites for a specific course
- Have not satisfied the academic probationary requirements resulting in suspension
- Judicial affairs request

- Have not made appropriate tuition and fee payments
- Enrollment is in violation of academic policy
- Was not admitted for the term in which they registered

It is the student's responsibility to complete and submit the appropriate forms to the Registrar's Office and ensure that he or she will not receive a final grade of "F" in a course if he or she chooses not to attend the class after being enrolled.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of "F."

Student Grievance Procedures

Procedures for student grievances are found in university policy UTDSP5005 (<http://policy.utdallas.edu/utdsp5005>). In attempting to resolve any student grievance regarding disputes over grades, application of degree plan, graduation/degree program requirements, and thesis/and dissertation committee, adviser actions and/or decisions, evaluations, and/or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originated.

Course Evaluation

There will be two anonymous chances that you can evaluate my teaching effectiveness and provide me with feedbacks.

1. There will an informal in-class mid-term review right before the first mid-term exam (see schedule). I will try to adjust the rest of the course based on the feedbacks from this mid-term review.
2. Approaching the end of the course, you will have the opportunity to complete an online course evaluation form. The university provides incentive (e.g., priority access to grades and a prize drawing) for students to complete this survey in a timely fashion.

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:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that

degree, it is imperative that a student demonstrates a high standard of individual honor in his or her scholastic work.

Academic Dishonesty. Academic dishonesty can occur in relation to any type of work submitted for academic credit or as a requirement for a class. It can include individual work or a group project. Academic dishonesty includes plagiarism (especially from internet sources), cheating, fabrication, and collaboration/collusion. In order to avoid academic dishonesty, it is important for students to fully understand the expectations of their professors. This is best accomplished through asking clarifying questions if an individual does not completely understand the requirements of an assignment.

Additional information related to academic dishonesty and tips on how to avoid dishonesty may be found here: <https://www.utdallas.edu/conduct/dishonesty/>.

Students in this course suspected of academic dishonesty are subject to disciplinary proceedings (c.f. <https://policy.utdallas.edu/utdsp5003>), and if found responsible, the sanctions will be determined according to the severity and the nature of the violation with the following minimum sanctions being applied:

- Upon the first violation on homework assignments, double the points of the question(s) in violation will be deducted from that assignment until no point can be deducted.
- Repeated violations on homework assignments will automatically result in zero point for that assignment and one letter grade reduction of the final course grade.
- Violation on any exam will automatically result in a letter grade of F for this course.

Warning: The nature of course makes it relatively easy and tempting to cheat, but it also makes it very straightforward to detect any cheating behavior. So **DO NOT ATTEMPT TO TRY YOUR LUCK!!** The University has zero tolerance for violations of academic integrity!!

Copyright Notice

It is the policy of the University of Texas at Dallas to adhere to the requirements of the United States Copyright Law of 1976, as amended, (Title 17, United States Code), including ensuring that the restrictions that apply to the reproduction of software are adhered to and that the bounds of copying permissible under the fair use doctrine are not exceeded. Copying, displaying, reproducing, or distributing copyrighted material may infringe upon the copyright owner's rights. Unauthorized distribution of copyrighted material, including unauthorized peer-to-peer file sharing, may subject students to appropriate disciplinary action as well as civil and criminal penalties. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. For more information about the fair use exemption, see <http://copyright.lib.utexas.edu/copypol2.html>. As a UT Dallas student, you are required to follow UT Dallas' copyright policy (UTDPP1043 at <http://policy.utdallas.edu/utdpp1043>) and the UT System's policy at <http://www.utsystem.edu/ogc/intellectualproperty/copyrighthome.htm>.

Student Conduct and Discipline

The University of Texas System (Regents' Rule 50101) and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UT Dallas online catalogs (<http://catalog.utdallas.edu>).

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Student Discipline and Conduct, UTDSP5003 (<http://policy.utdallas.edu/utdsp5003>). Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SSB 4.400, 972-883-6391) and online at <http://www.utdallas.edu/deanofstudents>.

A student at the University neither loses their rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating its standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Student Accessibility Service

It is the policy and practice of The University of Texas at Dallas to make reasonable disability-related accommodations and/or services for students with documented disabilities. However, written notification from the Office of Student Accessibility (OSA) is required (see <http://www.utdallas.edu/studentaccess>). If you are eligible to receive disability-related accommodations and/or services and to ensure accommodations will be in place when the academic semester begins, students are encouraged to submit documentation four to six weeks in advance. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact the Office of Student Accessibility for a confidential discussion. OSA is located in the Student Services Building, suite 3.200. They can be reached by phone at 972-883-2098, or by email at studentaccess@utdallas.edu.

The Office of Student Accessibility provides:

1. Academic accommodations for eligible students with a documented permanent physical, mental or sensory disability
2. Facilitation of non-academic and environmental accommodations and services
3. Resources and referral information, and advocacy support as necessary and appropriate.

It is the student's responsibility to notify the instructor of the need for such an accommodation. OSA provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the instructor immediately during the first class meeting.

Special Assistance

For help with test anxiety or time management, the following resources are available: your academic advisor, the Learning Resource Center (MC2.402), the Counseling Center (SU1.608), the New Student Programs Office (SU1.610), your instructor.

Title IX: Sexual Discrimination, Harassment and Assault

The University of Texas at Dallas (see <https://policy.utdallas.edu/utdbp3102>) is committed to providing an educational, living and working environment that is welcoming, respectful and inclusive of all members of the University community. An environment that is free of discrimination and harassment

allows members of the University community to excel in their academic and professional careers. To that end and to the extent provided by applicable federal and state law, the University prohibits unlawful discrimination against a person because of their race, color, religion, sex (including pregnancy), national origin, age, disability, genetic information, or veteran status. The University commitment to equal opportunity extends its nondiscrimination protections to include sexual orientation, gender expression and gender identity.

Sharing Confidential Information. Students considering sharing personal information in email, in person, or within assignments or exams should be aware that faculty members and teaching/research assistants are required by UT Dallas policy to report information about sexual misconduct to the UT Dallas Title IX Coordinator. Per university policy, faculty have been informed that they must identify the student to the UT Dallas Title IX Coordinator. Students who wish to have confidential discussions of incidents related to sexual harassment or sexual misconduct should contact the Student Counseling Center (972-883-2527 or after hours 972-UTD-TALK or 972-883-8255), the Women's Center (972-883-8255), a health care provider in the Student Health Center (972-883-2747), the clergyperson (or other legally recognized religious advisor) of their choice, or an off-campus resource (i.e., rape crisis center, doctor, psychologist). Students who are sexually assaulted, harassed, or victims of sexual misconduct, domestic violence, or stalking, are encouraged to directly report these incidents to the UT Dallas Police Department at 972-883-2222 or to the Title IX Coordinator at 972-883-2218. Additional information and resources may be found at <http://www.utdallas.edu/oiec/title-ix/resources>.

Campus Carry

The University's concealed handgun policy is posted on the campus carry website: <https://www.utdallas.edu/campuscarry/>.

Resources to Help You Succeed

The Office of Student Success operates the Student Success Center (SSC, <http://www.utdallas.edu/studentsuccess>), which offers assistance to students in the areas of writing, mathematics, communication, multiple science fields, reading, study skills, and other academic disciplines. These services are available through individual and small group appointments, workshops, short courses, and a variety of on-line and instructional technologies. All students enrolled at UT Dallas are eligible for these services.

The **Math Lab** gives short-term and semester long support for a variety of introductory and advanced mathematics courses. Students may drop in to visit with a math tutor on a regular basis. Comet card is required.

The **Writing Center** offers a collaborative learning environment for one-to-one and small group assistance with general and advanced writing assignments and overall writing skills. Scheduling an appointment is strongly recommended, but walk in appointments are possible if a tutor is available.

The **Peer Tutoring** program offers free tutoring assistance in multiple locations for many of the historically challenging undergraduate subjects at UT Dallas. Tutoring sessions, offered every weekday on a drop-in basis, are one-on-one or in a small group format. The sessions are designed to meet students' individual questions and needs related to course/subject concepts. All peer tutors are current UT Dallas students who made an A- or better in the course and have a strong faculty/staff recommendation. Students should check the Student Success Center website each semester for subject offerings and session times.

The **Peer-Led Team Learning (PLTL)** program provides an active, engaged learning experience for students who meet in small groups once a week with a Peer Leader who helps guide them through a potentially difficult gateway course. Students that attend sessions regularly typically earn a half to a whole letter grade higher than students that do not participate in the PLTL program.

Supplemental Instruction (SI) provides free, peer-facilitated weekly study sessions for students taking historically difficult courses. SI sessions encourage active, collaborative learning based on critical thinking and transferable study skills. SI leaders attend lectures, take notes, and read assigned material just like the enrolled students. Students should check the SSC website for subject and session times.

The **Communication Lab (CommLab)** offers one-on-one and group consultations where you will gain practical feedback for improving oral and group presentations.

Success Coaches are available for individual student appointments to discuss study skills, time management, note taking, test taking and preparation, and other success strategies.

The Student Success Center's main office is located in the McDermott Library Building and can be contacted by calling 972-883-6707 or by sending an email to ssc@utdallas.edu.

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. Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

Disclaimer. The instructor of this course reserves the right to revise this syllabus and adjust the course descriptions/material and class schedules at the instructor's discretion. Any amendment to this syllabus will be announced in class, through email or reflected in the revised version of this syllabus in time for students to react. It is the responsibility of the student to read and understand this syllabus.

Tentative Schedule and Due Dates

| Class | Date | | Module | Topics | Readings | HW due | Notes |
|-------|-----------|----|-----------------------------|---|---------------|--------|-------|
| 1 | August | 23 | Introduction | Syllabus; Excel Basics; ASP | Appendix 1 | | |
| 2 | | 30 | Classification | Multi-Linear Regression; Logistic Regression | Chapter 6 | HW#1 | |
| 3 | September | 6 | & Prediction | kNN; Naïve Bayes | | | |
| 4 | | 13 | Decision Analysis | Decision Trees; Sensitivity Analysis; | Chapter 13 | HW#2 | |
| 5 | | 20 | | Value of Information; More examples; | | | |
| 6 | | 27 | | Review Session ; Start Simulation | Chapter 14 | HW#3 | |
| 7 | October | 4 | Monte Carlo Simulation | Exam 1 (100 mins) - Midterm Survey | | | |
| 8 | | 11 | | Simulation Basics; Distribution Selection | | | |
| 9 | | 18 | | Parametric Sensitivity; Tornado Analysis | | | |
| 10 | November | 25 | Optimization | Optimization Basics; Linear Programming | Chapter 9 | HW#4 | |
| 11 | | 1 | | LP Sensitivity Analysis | | | |
| 12 | | 8 | | Review Session ; Start Integer Programming | Chapter 8, 11 | HW#5 | |
| 13 | | 15 | | Exam 2 (150 mins) | | | |
| | | 22 | | Fall Break - No Class | | | |
| 14 | | 29 | | Integer Programming; nonlinear Programming | | | |
| 15 | December | 6 | Conclusion | Summary; Review Session | | HW#6 | |
| | | 13 | Take-Home Final Exam | | | | |