SCMS 7110 (online)

Analytical Tools for Business

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Spring semester 2019, 3 credit hours
Off. Hours: TT – 8:30 to 9:30 and 11:15 to 12:15 or by appointment
Please call my cell in advance to make sure that I am not in a meeting or to make an appointment during non-office hours.

Recommended Books

The recommended books for the course are: Levine “Statistics for Managers Using Microsoft Excel”, ed5 or ed6; and Balakrishnan “Managerial Decision Modeling with Spreadsheets” ed2 or ed3. The podcasts were made from the Levine and Balakrishnan books. These two books are available on the internet and some nearby off campus bookstores.

Note: I am allowing you to choose your books to save money. It might be less expensive to buy both the Levine and Balakrishnan books on the internet. The test will basically come from the podcasts and PPT’s and will be open book. As more online course information becomes available the syllabus could be updated.

Discussion Forums & Topics:

Go to elearn.memphis.edu to have group discussions on all the chapters in the book. Each student will be required to “host” 1 or more chapter discussion forums (some chapters are larger than others). Students may volunteer for particular chapters or I can assign chapters. I will not require the homework to be turned in. However, students must post the homework problem solutions associated with each chapter in the discussion forum for the chapters that they host. Students hosting each chapter can decide who will post which problem solutions. If there are not enough problems for everyone, then pick other problems in the chapter to host, summarize and/or explain difficult concepts, or discuss analytical concepts that you’ve experienced in your work or personal life. It’s up to each group of hosts to decide. Part of your grade will depend on the discussion forum interaction with other students.
I know that some problems are more difficult than others, but regardless of that, be sure to point to the concepts that each homework problem addresses. Also, students can work together on the more difficult and longer problems. The hosts will be responsible for “mastering” the topics of their respective chapters and posting the homework. In other words, to “host” the discussion chapter simply means the time when that particular student is “in charge”, or “guarding the fort” so to speak. The hosts are the first recourse for other students who might have questions or need help. They will help with homework and download solutions to homework problems. It’s sort of a “security blanket” for other students, because I will sometimes be sleeping (LOL) or teaching other courses and cannot be online at all times. The host will be on the lookout for “lost souls” wandering around the “cyberspace” of our online course for his or her assigned time period. It’s just an idea that I came up with in my first online class and students have expressed positive opinions of it. Hopefully, it’s to assure that all homework solutions and related chapter discussions will be posted for all to see.

Furthermore, if there are not enough homework problems, then the host(s) should discuss or summarize concepts mentioned in the chapter, or, as mentioned above, discuss real life experiences that you might have had with chapter topics either through chance or in the work place.

**Critical thinking project:**

In addition, all students must complete the critical thinking project case study. The CTP and Hosting are each worth 50 points for a total of 100 points. The CTP is a case study from the London School of Economics. (The critical thinking project, due to be completed at the end of the semester, should be submitted in the “dropbox” of the class website.) No number crunching is required. You are in charge. Have fun…be creative with your answer. There is no one correct answer.

So, at the first chance to log in when the semester starts, please go to “elearn.memphis.edu” and find the course (SCMS 7110) and select it. I have some notes and instructions for all of you at the link. Then click on “Discussion” in the upper right hand corner of the screen and it will take you to a list of all of the discussion forums. The hosts that have selected their assigned chapters will be listed in each chapter section. Another critical section of the class website is the “content” section. It is a good idea to print this page. This page has critical dates listed. It also has a link to the class syllabus.

Remember, we are starting with the Levine podcasts. You are already assigned a chapter to host. All of you should then start viewing the podcasts. If you have problems viewing the podcast, then try using the Mozilla Firefox browser. Remember to call tech support (see below) if you need help loading or using Mozilla Firefox. Please read the next section.

**Podcast:**

You will be assigned a chapter for hosting (see section above on Discussion Forums). Then all of you should start viewing the podcasts. The podcasts are loaded in the website. Just click on “content”, then “course resources” and the Levine and Balakrishnan playlists are located at the bottom. The first podcast you should view is titled “chapter 13 part a” or “lev13a”. The Levine podcasts are the accompany the reading of chapter 11 in the Balakrishnan book.

I know that many of you are still learning about online courses. I think that once you get the basics down it will be a very positive experience for all of you. Again, I am only a phone call or email away.
Technical Support:
Please call UM Technical Support Services at 678-8888 if technical problems arise.

Course Description and Objectives:

Analytical concepts and tools useful in understanding, assessing, and controlling operations of business. The major objectives are both an understanding of the statistical techniques and analytical methods introduced in the course and comprehension of a framework for the application of these tools to business problems and business research activities.

Sustainable competitive advantage requires making the right strategic decisions and decisions that are informed and guided by evidence. The major objective of this course is to provide executives with a broad theoretical as well as practical knowledge of various quantitative tools that are used to support and improve strategic decision making process. The focus is on how to utilize various decision support tools for making better decisions as opposed to learning the tools for their sake.

The course provides basic knowledge and skills for model-assisted decision making based on hands-on experience with relevant tools and technologies adopted from the fields of statistics, optimization, and simulation. The course introduces and examines the critical role of model-assisted decision making processes in approaching a host of strategic issues and problems, both stochastic and deterministic. The emphasis will be on problem framing and decision technologies. Applying case study-based approach and utilizing value-chain processes, we focus on problem framing, model building, and decision-making approaches and technologies for a host of strategic decisions in the areas that include, but are not limited to: linear programming, both graphical and computer methods, transportation, assignment, and network models, decision analysis, queuing models, simulation modeling, multiple regression, and forecasting models. Extensive use is made of MS Excel and a variety of software tools provided by the textbook to support a host of topics.

Evaluation:

The final grade in the course is determined by three regular semester exams and a comprehensive final exam. The exams will be online and multiple choice. Failure to turn in all tests on time could result in a drop of one letter grade. The following scale is used:

A = 92 percent of total points possible
B = 82 – 91
C = 72 – 81
D = 68 – 71
F = 67 and less

Class participation and attendance:

No make-up work is provided for assignments or tests. However, exceptions are made for emergencies. All tests must be turned in ON TIME to receive credit. Because of the difficult nature of this material, students are expected to complete all required reading assignments and homework problems. The podcasts are labeled according to the book and chapter, i.e. the first podcast of chapter one of the Levine book will be labeled “levine1a”.
**Content:**

Chapters 13, 14, 15 and 16 of the Levine *podcasts* will cover simple linear regression, multiple regression, and time-series forecasting. Whole or portions of chapters 12, 1, 2, 3, 4, 5, 6, 8, 9, and 10 of the Balakrishnan book will conclude the course. Topics to be covered in the Balakrishnan book include: regression, forecasting, linear modeling: graphical and computer methods, sensitivity analysis, queuing models, transportation/assignment/network models, integer/binary programming, decision analysis, and simulation models. See table of contents in book for full detail of coverage. Also attached to the syllabus are detailed lists of reading and homework assignments. Certain topics may be stressed more or less than others.

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**Grading**

Hosting/CTP - 25% (100 pts.)
Test I - 25% - (100 pts.)
Test II - 25% - (100 pts.)
Test III - 25% - (100 pts.)

That’s a total of 400 possible points. Please be aware that all test must be taken solo. A student could be randomly selected to verify test results.

WARNING: A prerequisite and/or upper division check may be done once the first class roll has been issued. If you do not have the appropriate upper division approval designated on your advisor form and/or prerequisite for this course, you may be administratively dropped. This check will not be completed until after the "add" period. If you do not have the required upper division approval or prerequisites, it is your responsibility to correct the situation during the official "add" period. In this regard, please make sure you contact your advisor and/or student handbook to fully understand the policies regarding drops, incompletes and other university policies that might affect academic progress. Please don’t wait until the last day of class to get problems resolved.

**Fogelman College: Learning Outcomes for Your Degree**

The Fogelman College has established the following learning goals for all students successfully completing the MBA degree:

- Graduates will be leaders.
- Graduates will be technologically competent.
- Graduates will be knowledgeable about social and ethical issues and trends affecting business.
- Graduates will be knowledgeable in functional areas and their integration.
- Graduates will be critical thinkers and problem solvers.

Additional goals for IMBA only:

Addition learning goals for students who successfully complete the IMBA degree:

- Graduates will be sensitive to social, ethical, and multi-cultural issues in international business.
The learning outcomes for this degree program are located on the MBA degree learning outcomes website. Notice that Goals indicate Learning Outcomes for the degree program. The objectives under each learning outcome indicate what must be done to reach the learning outcome. Faculty members in the Fogelman College developed these learning outcomes and periodically assess students to determine the level that the learning outcomes are being met.

Course 7110 Scheduled Reading and Podcast Assignments

The exact dates for the reading and podcast schedule can be found on the class elearn.memphis.edu website. The instructor may adapt the pace and the order of presentations to fit the needs of the class. These reading and homework assignments are in addition to viewing the online podcasts. Please note that the reading and homework assignments are taken from the Balakrishnan book. The podcasts for regression and forecasting are labeled lev13a, lev13b, etc. There should be only minor discrepancies and ignore any reference to pages and homework in the Levine podcasts. Finally, please note that web searches can produce any statistical table referred to in the podcasts.

Please note the following for your upcoming tests:

You will have at least 24 hours to take the open book, multiple choice tests. You must take the test solo. There is always the random chance that you will be asked to verify the results of the test under supervision. Start the test any time you want, but make sure and give yourself enough time to take the test. In other words don’t wait till there’s only 30 minutes left on the clock! 😊 There is no time limit on any question. However, once you start the test you will have 5 hours to complete it. It should take much less time than that however. Please note that you cannot log off and restart the test later. Once you start the test, then you have to finish the test. Finally, I want the test to be as adaptive to your schedule as possible. Online classes should not be as restrictive with schedules as are face-to-face classes.

Reading and podcast schedule:

1/14 – 1/28
Read Sec. 11.8 Balakrishnan or chapter 13 Levine
Podcasts: lev13a-e

1/29 – 2/7
Podcasts: 14a-d

2/8 - start date
Test 1. Chapters 13 and 14 of the Levine podcasts and section 11.8 of Balakrishnan text. The exact start time and end time for Test 1 can be found on the class elearn.memphis.edu website in the “quizzes” section.

2/10 – 2/13
Read secs. 11.1 to 11.7
Podcasts: 15a – 15b.
2/14 – 3/1
Podcasts: 16a-g

3/2 - start date

Test 2. Chapters 15 and 16 of the Levine podcasts and sections 11.1 thru 11.7 of Balakrishnan text. The exact start time and end time for Test 2 can be found on the class elearn.memphis.edu website in the “quizzes” section.

3/4 – 3/14
Balakrishnan: Sec. 1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, and 2.7
Balakrishnan Podcasts: 1a, 2a-d

3/15 – 3/17
Sec. 3.1, 3.2, 3.3, 3.4, and 3.5
Podcasts: 3a

3/18 – 3/20
Sec. 4.1, 4.2, 4.3, 4.4, and 4.5
Podcasts: 4a-c

3/21 – 3/25
Sec. 5.1, 5.2, 5.3, 5.5, 5.6, 5.7, 5.8, and 5.9
Podcasts: 5a-d

3/26 – 3/27
Sec. 6.1, 6.2, 6.3, and 6.4
Podcasts: 6a-b

3/28 – 4/2
Sec. 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, and 8.7
Podcasts: 8a-d

4/3 – 4/12
Sec. 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, and 9.8
Podcasts: 9a-d

4/13 – 4/20
Sec. 10.1, 10.2, 10.3, 10.4, and 10.5
Podcasts: 10a-d

4/21 – 4/27
Critical Thinking Project due on 4/27 (please refer to case study and CTP section above), along with any 3 of 8 case studies from homework section above. Please put in “dropbox” on website. Please note that you may start submitting the chapter case studies located in the dropbox of the class website on or after January 30th. Refer to elearn.memphis.edu website in the “content” and “discussion” sections.
4/26 start date

Test 3. Chapters 2, 3, 4, 5, 6, 8, 9, and 10 of the Balakrishnan section of the book. The exact start time and end time for Test 3 can be found on the class elearn.memphis.edu website in the “quizzes” section.

Business Statistics Homework Assignments
(Note: HW data and PPT’s can be found on my UMdrive public directory.)
(Note: complete solutions can be found on the eCourseware website)

**Levine** (recommended homework problems)

Homework Chapter 13: 1, 2, 4, 12, 16, 26, 32, 34, 40, 56
Homework Chapter 14: 2, 4 a-d, 10 a-d, 24
Homework Chapter 15: 1, 2, 12, 13, 14, 19
Homework Chapter 16: 1, 2, 6, 10, 24, 25, 32

**Balakrishnan**

Homework Multiple Regression, Forecasting – chapter 11: 1-12, 13, 19, 31
Homework LP Modeling - chapter 2: 13, 22
Homework Sensitivity Analysis – chapter 4: 1 – 4, 10
Homework Transportation, Assignment & Network Models – chapter 5: 12, 27
Homework Decision Analysis – chapter 8: 1 - 5, 13, 16, 29
Homework Queuing Models – chapter 9: 11, 33
Homework Simulation Models – chapter 10: 15, 20

**Academic Integrity:**
The University of Memphis has clear codes regarding cheating and classroom misconduct. If interested, you may refer to the Student Handbook section on academic misconduct for a discussion of these codes. Should your professor have evidence that cheating has occurred, he/she may take steps as described on the campus’ Office of Student Conduct website. If you have any questions about academic integrity or plagiarism, you are strongly encouraged to review the Fogelman College’s Website on Academic Integrity.

**Student Services:**
Please access the FCBE Student Services page for information about:

- Students with Disabilities
• Tutoring and other Academic Assistance
• Advising Services for Fogelman Students
• Technical Assistance