SCMS 3711
Analytical Tools for Business

Dr. Michael J. Cervetti – Off: FEC Room 158
Cell: (901)834-2050 Off: (901)834-2050 Hm: (901)834-2050
Email: mcervtt1@memphis.edu
Fall 2015 semester, 3 credit hours
Last updated – August 2015
Off. Hours: MW 2-3, 6-7 and by appointment


Optional books: Levine “Statistics for Managers Using Microsoft Excel”, ed5 or ed6; and Balakrishnan “Managerial Decision Modeling with Spreadsheets” ed2.

Note: 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 associated with each chapter in the discussion forum for the chapters that they host. Students hosting each chapter can decide who will post which problems. In addition, all students must complete the critical thinking project. (The critical thinking project, due to be completed at the end of the semester, should be submitted in the “dropbox” of the class website.)

The chapter discussion forums will include the discussion of homework problems for each chapter. 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 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, if possible, discuss real life experiences that you might have had with chapter topics either through chance or in the work place.

So, at the first chance to log in when the semester starts, please go to “elearn.memphis.edu” and find the course (SCMS 3711-M??) and select it. I have some notes and instructions for all of you in 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. I will select the chapters for the hosts. It is a good idea to print this page. This page has critical dates listed.

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 there. The first podcast you should view is titled “chapter 13 part a” or “lev13a.”

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.


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 programing, 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 the homework postings on the discussion forums along with a final project (Critical Thinking Project case study). 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 completed ON TIME to receive credit. Because of the difficult nature of this material, students are expected to complete all required reading assignments, podcast viewing, and homework problems. The podcasts are labeled according to the book and chapter, i.e. the first podcast of chapter 13 of the Levine book will be labeled “lev13a”.

Content: Chapters 13 thru 16 of the Levine book will cover simple linear regression, multiple regression, model building, and time-series forecasting. Chapters 1, 2, 5, 8, 9, and 10 of the Balakrishnan book will conclude the course. (Again, please note that both books are contained in one book.) Topics to be covered in the Balakrishnan book include: linear modeling: graphical and computer methods, sensitivity analysis, queuing models, transportation/assignment/network models, decision analysis, and simulation models. See table of contents in book for full detail of coverage. Also attached to the syllabus below are detailed lists of reading and homework assignments. Certain topics may be stressed more or less than others.

* * * *

Grading

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosting/HW Forums/Critical Thinking Project</td>
<td>25% (50 points for HW discussion, 50 pts. for CTP)</td>
</tr>
<tr>
<td>Test I</td>
<td>25% (100 pts.)</td>
</tr>
<tr>
<td>Test II</td>
<td>25% (100 pts.)</td>
</tr>
<tr>
<td>Test III</td>
<td>25% (100 pts.)</td>
</tr>
</tbody>
</table>

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.

BBA Degree Program Learning Outcomes

The learning outcomes for this degree program are located on the following URL. 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. URL: http://www.fcbeassessment.net/LearningOutcomes/BBADegreeLearningOutcomes.pdf

Course 3711 Scheduled Reading and Podcast Assignments

The exact dates for the reading schedule can also be found on the elearn.memphis.edu website in the “discussion” and “content” sections. Simply click on each chapter module in the “content” section and a brief discussion of what we will cover in that chapter and the dates for covering that chapter are listed. 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 the following for your upcoming tests:

You have at least 24 hours (it’s usually more) to take the open book, multiple-choice test. Once the test has been activated, you have a five-hour time limit to finish the test. You must take the test solo. You cannot log off and resume the test at a later time. Please remember, 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 that you give yourself enough time to complete 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. I want the test to be as adaptive to your schedule as possible. Online classes should not be as restrictive with schedules as face to face classes

Statistics Scheduled Reading Assignments

The following schedules are strictly tentative. The instructor may adapt the pace and the order of presentation to fit the needs of the class.

1/19 – 1/30
Introduction and Review of Basic Statistical Concepts: Chapters 1 and 2.
Podcasts: lev13a – 13e

1/31 – 2/6
Simple and Multiple Regression: Chapter 4.
Podcasts: lev14a – 14d

2/7 – 2/8
Test 1: Chapters 1, 2, & 4, podcasts: lev13a – 13e, lev14a – 14d. The exact start time and end time for Test 1 can be found on the class elearn.memphis.edu website in the “quizzes” section.

2/9 – 2/11
Data Mining: Chapter 6.
Podcast: lev15a – 15b
2/12 – 2/28
Time Series Analysis and Forecasting: Chapter 5.
Podcasts: lev16a – 16g

2/29 – 3/1
Spreadsheet Models: Chapter 7.
Podcasts: bala1a

3/2 – 3/3
Test 2. Chapters 5 and 6, podcasts: lev15a – 15b, lev16a – 16g. 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 – 3/17
Linear Optimization Models: Chapter 8.
Podcasts: bala2a – 2d

3/18 – 3/18
Integer Linear Optimization Models: Chapter 9.
Podcasts: bala6a – 6b

3/19 – 3/23
Network Flow Models Chapter 8
Podcasts: bala5a – 5d

3/24 – 4/1
Decision Analysis: Chapter 12.
Podcasts: bala8a – 8d

4/2 – 4/12
Queuing: Chapter 11.
Podcasts: bala9a – 9d

4/13 – 4/21
Monte Carlo Simulation: Chapter 11.
Podcasts: bala10a – 10d

4/28
Critical Thinking Project due. Please put in “dropbox” on website. Refer to elearn.memphis.edu website in the “content” and “discussion” sections.

4/29 – 5/1
Test 3 (Chapters 7-9, 11-12, podcasts: bala1a, bala2a – 2d, bala6a – 6b, bala5a – 5d, bala10a – 10d, bala9a – 9d, bala8a – 8d). The exact start time and end time for Test 2 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 the public directory on https://umdrive.memphis.edu/mcervtt1/public.)

Homework Chapter 4: 1, 2, 4, 9.
Homework Chapter 5: 4, 5, 7, 10, 17, 23
Homework Chapter 7: 1, 2
Homework Chapter 8: 1, 2, 16,
Homework Chapter 9: 1, 10.
Homework Chapter 11: 1, 5
Homework Chapter 12: 2, 4

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