Course: BA 360: Quantitative Methods for Business and Finance Management
3units, 45 contact hours.
Thursday (Th): 1530-1815
Instructor: Aharon Hibshoosh
Office Hours: Wed., Th.: 2115-2315.
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Required Textbook: David R. Anderson, Dennis J. Sweeney, Jeffrey D. Camm,
James J. Cochran, Michael J. Fry and Jeffrey W. Ohlmann (2015) *An Introduction to
Management Science: Quantitative Approaches to Decision Making, 14th ed.* , ISBN-
10: 1111823618 | ISBN-13: 9781111823610, Cengage Learning.

Recommended textbook: Fredrick S. Hiller and Mark S. Hillier (2014*) Introduction to
Management Science; A Modeling and Case Studies Approach with Spreadsheets* (and
Student CD), 5th ed. ISBN 0078024064, or 4th ed. ISBN 978 -0-07-809660-0, Mc
Graw-Hill, Irwin

Recommended Textbook: Lawrence L. Lapin and William D. Whisler. (2002)
Quantitative Methods for Business Decisions, 7th ed., Belmont CA: Duxbury, Thomson
Learning. (ISBN 0-534-38024-7).

BA 360: Quantitative Methods for Business and Finance Management

Course description:

Catalog description: While solving a problem, managers must consider both qualitative
and quantitative factors. This course covers quantitative methods which help to solve
different business problems. Techniques include decision analysis, regression analysis,
forecasting, transportation, and assignment models, Markov Analysis, stochastic
equations, statistical quality control and others. (3 units). Prerequisite: Math 10 or Math
15.

 BA 360 introduces the students to formal mathematical and statistical reasoning in
Business. It familiarizes the student with methods of decisions and measurement as
applied in models that are widely used by decision-makers in industry and business.
Special attention is given to applications in Financial Management. These are strongly
affecting decision making in other disciplines, e.g., Marketing, Logistics, Management,
and Production. The course requires elementary knowledge in mathematics and statistics
on which we will build further knowledge.

Several key topics in Operations Research and statistics are covered and applied. There is an emphasis on both procedure and rationale. The student is trained in problem formation and setting and in the usage of procedures and algorithms in the solution of the problems. The student thus needs to pay attention to the rationale in problems's setting as well as to the rationale embedded in the algorithmic process.

Methodology:

The teaching will be done mostly by lecture and exercise mode. The students will achieve comprehension of the topics through routine individual problem set ups and solving. The professor's requirements for set ups and solutions are often more stringent than those in the textbook. Thus, the course requirements supersede the textbook's requirements. The HW is individually and group supervised to assure turning of complete HW.   We are using the CANVAS software for HW collection, submission time monitoring and grade assignments.   The HW files are submitted for grade *only* through CANVAS. In addition, every student must bring the hard copy of the submitted HW for inspection at the beginning of the class and use it to pass over the solutions or to present the student's solution to the rest of the class. Failing to do so may result in lower HW credit.   Every student must be listed with CANVAS. An added student must belong to a group and inform the teaching assistant his/her added status and group number. HW is due by 1AM Thursday, as instructed by CANVAS. If you are late, you still may use an automatic extension of 8 hours and submit the HW by 9 AM Thursday through CANVAS. CANVAS has a built in time cut off function and will not allow submission past the deadline or the deadline extension. No further extension will be provided. Hence, any homework past the due date extension deadline will not be accepted for grading.
In reporting to CANVAS every student must list on his/her assignment by the following order, the following information: Student ID, Last Name and First Name- as appear on the enrolment sheet and group number.

The problems will be assigned from the textbook as well as from the recommended supporting sources. Students may be called to the board to demonstrate and explain their solutions. The textbook will be used as a handbook. It must be brought to class, whenever its topics are studied.

 Students should be aware that past experience indicates that the overall effect of HW performance on the grade is on average about 70 to 80 percent, even though the direct contribution of the HW to grade as computed is only 10%. There will be weekly exercise session where the Teaching Assistant will go over the solutions to the given problems and help understanding most recently taught material. Attendance will be taken at these sessions.

Additional Material Requirements:

A simple calculator without <u>any</u> second function but with a square root function. Memory storage and recall functions are allowed. Possession of the textbook and of the simple calculator is required in every class meeting.

<u>Course Learning Objectives</u>:

As a result of this course the student should be able to:

1. Solidify the student's prerequisites in algebra, geometry, statistics and elements of computer science as applied to Quantitative Methods in Business and Financial Management.
2. Model realistic phenomena while paying attention to model's borders.
3. Formally and precisely express ideas with the aid of notations, symbols and formulae as they apply to structured set-ups and solutions
4. Solve complex problems by their breakdown to several ordered sub problems in a hierarchical manner.
5. Demonstrate his/her comprehension of the necessary in problem setups and in the structure of algorithms for problem solutions.
6. Interpret results of quantitative models.
7. Demonstrate working knowledge of sensitivity analysis.
8. Use linear programming as a flexible optimization tool, and apply the EXCEL software for its application.
9. Compare Inventory models
10. Set up project activity network, and determine the critical path and optimal scheduling.

<u>Student Conduct</u>:

➢ Please participate. What you put into the class will determine what you get out of it – and what others get out of it.
➢ Please come **<u>on time.</u>** Late arrivals disturb everyone else. Plan to stay during the whole class period. Attendance may be taken at least one time in of each class. In the case where more than one attendance is taken, <u>only students attending all attendances would be considered as present</u>. Attendance is a component of the overall grading.
➢ Students may not read other materials (newspapers, magazines) during class and no multitasking is allowed.
➢ Students are not allowed to come and go during class sessions.
➢ If you miss a class, you are responsible for getting notes/slide printouts on the material covered from a classmate in your group.
➢ To avoid distracting noise in class, cellular phones **<u>must</u>** be turned off or the ringing mode silenced.
➢ During an exam or a review of an exam all recording devices of any form must be closed and stored in closed bags. (<u>See also Examination Policy</u>).

➤ All class participants are expected to exhibit respectful behaviors to other students and the instructor. All students have the right and privilege to learn in the class, free from harassment and disruption. Inappropriate or disruptive behavior will not be tolerated, nor will lewd or foul language.

Examination Policy:

The exams are closed books exams. I will use exams with mixed format. One part of every exam is objective, consisting of TF and MC questions. The student should be aware that questions in this part often require problem solving and/ or involve challenging conceptual questions. It is thus as challenging as the second part. The second part (with larger weight in the exam) is comprised of problems which require students' written answers. No breaks are allowed during the midterm or the final. (I will make alternative testing opportunities where the need for break is medically required and professionally supported by a letter from a medical doctor.).
The student is required to bring an approved simple calculator to the exams. No exchange of pencils, pens, erasers and any other material between students is allowed. No electronic instrument capable of copying material in any form (in particular, in print or visual image) is allowed in the exam or during a review of an exam. In particular, cell phones, organizers, advanced calculators, tape recorders, cameras, computers, etc. must be closed and stored inside a closed bag. Students violating these requirements should expect an F, as well as further disciplinary hearing.

Grading Guidelines:

Class participation and attendance 10 pts
Homework and assignments 10 pts
Midterm 30 pts
Final 50 pts.
Total course points: 100 pts

The grade will be based on a curve, reflecting the standards of Lincoln University.

Grade	Satisfactory Cut points for Grade
A-, A	80, 85
B - B, B+	60, 70, 75
C-, C, C+	48, 52, 55
D, D+	42, 45
F	Below 42

Course Schedule:

Topics and Tentative Schedule^

We will focus on elements in the following chapters^, in Lapin and Whisler:

Topics	Chapters and Other Resources *

1/19-1/26   Introduction and Quantitative tools   A 1, 2; H 1; L8

1/19-2/16   Linear Programming I (Graphical Solution)   A 1, 2; H 2; L8

2/23-3/23   Linear Programming II (Multivariate and Computer Solutions) A 3, 4, 5; H 2, 3, 4, elements of 5; L 9

3/23 - 4/13 Inventory Models   A10; H 18 and elements of 19; L15 and elements of L16

4/13- 4/27 Project Management with PERT and CPM   A9; H16; L14

Special Dates:

3/14 - 3/18 Spring Recess

Exam Dates: Midterm 3/9. Final 5/4.

Flex. Sched. Mathematical and Statistical Software for Modeling and Analysis.

 ^These are tentative dates.

*Chapters are supported by other resources in the form of supporting files and computer resources.   The capital letters denote the book: A-- Anderson et al. H-- Hillier et al. L—Lapin et all.   The number(s) following the Capital letter denote the chapter(s).

I will make an effort to expedite presentation, and if time permits, introduce some elective topic(s) in Linear Programming, Networks, Inventory, Probability or Decision Sciences, etc. I will also expose interested students to advanced math and stat techniques and software outside the classroom.   While these presentations will not be part of the required course material, this exposure is likely to support a student's education and career.

Updated: January 8, 2017.   Additional updates may follow. See Canvas for new updates.