Lincoln University

Fall 2013
Mr. Hibshoosh

Course: BA 241 – Quantitative Analysis
Credit: 3 units, 45 lecture hours
Tuesday (T): 12:30-15:15
Instructor: Aharon Hibshoosh
Office Hours: T: 18:15-19:15
Phone: (510) 843 6584
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Textbook: Lawrence L. Lapin and William D. Whisler. *Quantitative Methods for Business Decisions,* 7 ed., Duxbury, Thomson Learning. (ISBN 0-534-38024-7).

BA 241 – Quantitative Analysis

Course description:

Catalog description: This course covers quantitative techniques for solving business problems and making management decisions. Techniques include production or output planning, capital investment and project analysis, linear and non-linear programming, probability theory, inventory control, scheduling, and waiting line models, as well as mathematical decision techniques. (3 units) Prerequisite: MATH 10 or MATH 15

BA 241 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. The latter 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 setting as well as to the rationale embedded in the algorithmic process.

Methodology:

The teaching will be done mostly by lecture and exercise mode. Guest lecture(s) may be important part of the course. 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 solved problems are due and collected at the beginning of the next class periods. This conduct of the HW is

individually and group supervised to assure turning of complete HW. Once the homework is collected, no late homework is accepted and thus receives no credit. 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 would 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 the average about 70 to 80 percent, even though the direct contribution of the HW to grade as computed is only 10%.

Additional Material Requirements:

1. Software: Lawrence L. Lapin, *Quick Quant* , Alamo Publising,1994 (Current version is provided in the textbook, or can be ordered over the Internet, based on address provided by the publisher).
2. Simple calculator without any 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.

Course Learning Objectives:

1. Solidifying student prerequisites in algebra, geometry, statistics and elements of computer science as applied to Quantitative Methods in Business and Financial Management.
2. Learning Formal and precise expression of ideas with the aid of notations, symbols and formulae as they apply to structured set-ups and solutions.
3. Learning to face and solve complex problems by their breakdown to several ordered sub problems in a hierarchical manner.
4. Comprehending the necessary in problem setups and in the structure of algorithms for problem solutions.
5. Paying attention to models and in particular to modeling borders as they are affected by business reality on one hand and by philosophy and technological constraints of the disciplines that guide modeling. The guiding disciplines are: mathematics, statistics, economics and computer science.
6. Learning to choose the correct model, select and define its variables and interpret its results.

Student Conduct:

- 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 **on time.** 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, only students participating in all attendances would be considered as present.

- Students may not read other materials (newspapers, magazines) during class an 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 **must** be turned off or the ringing mode silenced.
- During an exam, the presence of any device capable of storing recoding any information in any form or image is strictly prohibited. This applies in particular to cell phones, organizers, cameras, recorders, advanced calculators, etc. Specifically, during an exam all recording devices of any form must be closed and stored in closed bags. (See also Examination Policy). The only exception is the simple calculator detailed above.

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 each of the parts of the final, if final is administered by parts. (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 erasers, pencils, or any other material is allowed. No electronic instrument capable of copying material in any form (in particular, in print or visual image) is allowed in the 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 score, as well as further disciplinary hearing.

Grading Guidelines:

Class 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	78, 83
B - B, B+	58, 68, 73
C-, C, C+	46, 51, 53
D, D+	40, 43
F	Below 40

Course Schedule:

Topics and Tentative Schedule^

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

Topics		Chapters and Other Resources *
8/27-9/3	Introduction and Quantitative tools	8
9/3-9/24	Linear Programming I (Graphical Solution)	8
9/24-10/15	Linear Programming II (Multivariate and Computer Solutions)	9
10/22-11/12	Decision Making	5 and elements of 6
11/12-12/3	Project Management with PERT and CPM	14

Special Dates:

11/26-11/30 Fall Recess

Exam Dates: Midterm 10/15. Final 12/10.

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

^These are tentative dates.

*Chapters are supported by other resources in form supporting files and computer resources.

I will make an effort to expedite presentation and if time permits introduce some electives topic(s) in Linear Programming, Networks, Inventory, Probability or Decision Sciences. 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 student's education and career.

Updated: August 3, 2013