Lincoln University

BA 360 – Quantitative Methods for Business and Finance Management

COURSE SYLLABUS
Spring 2020

Instructor:	Prof. Aharon Hibshoosh, Ph.D.
Lecture Schedule:	Tuesday, Thursday (1/21-3/5)*, 15:30 - 18:15
Credits:	3 units / 45 lecture hours
Level:	Mastery 1 (M1)
Office Hours:	Tuesday, Thursday: 21:15 - 23:15
	e-mail: ahibshoosh@lincolnuca.edu
	Phone: (510) 712 4410
Textbooks:	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: 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).
Last Revision:	January 12, 2020

*Final's date 3/17

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: BA 45 or BA 241

COURSE DESCRIPTION

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 problem's setting as well as to the rationale embedded in the algorithmic process.

EDUCATIONAL OBJECTIVES

The purpose of this course is to solidify the mathematical knowledge of the students in algebra, geometry, statistics, and computer science and to bring the student to use those in the mathematical formation and solution of business problem. Hence, student should be able to read business situations and systematically and rigorously form mathematical models that address them. The student should become familiar with standard types of models, identify the applicable model type and in selected cases apply computerized software for the solution of his/her formalized problems. The following course outcomes provide specifics regarding the course objectives.

COURSE LEARNING OUTCOMES[1]

As a result of your study you should be able to:

	Course Learning Outcomes	Program LO	Institutional LO	Assessment Activity
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.	PLO 3	ILO 1b, ILO 6b.	Homework: problems and, cases
2.	Model realistic phenomena while paying attention to model's assumptions and borders.	PLO 3 PLO 5	ILO 1b, ILO 6b. ILO 4b, ILO 5b.	
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			

[1] Detailed description of learning outcomes and information about the assessment procedure are available at the Center for Teaching and Learning website (ctl.lincolnuca.edu).

	application.			
9.	Compare Inventory models.			
10.	Set up project activity network, and determine the critical path and optimal scheduling.			

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 and only in a doc. Format. Only submission of typed answers would be considered, with following exception for graphs. Graphs may be done either using computer software, or by hand on a graph paper. If the graphs are done by hand, they must be scanned, and the scanning done by a scanner prior to submission to make them clearly legible. Graphs must be highly legible to be considered admissible. 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 Tuesday or 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 of that date, 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.

Students joining the class late due to administrative delays must attend special lectures during the office hours in order to catch up with the material and not delay the rest of the class. Failure to do so may result in/or non-admission to the class and course failure.

Assignments and projects require students to actively use resources of the library. Detailed guide to business *resources of the library* as well as the description of Lincoln

University approach to *information literacy* are available at the Center for Teaching and Learning website (ctl.lincolnuca.edu).

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.

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 attending all attendances would be considered as present. 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 **must** 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. (See also Examination Policy).
- 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.

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. The following table details the satisfactory cut points for the grade, and the corresponding grade.

Course Points	Grade
85 and above	A
80-84	A-
75-79	B+
70-74	B
60-69	B-
55-59	C+
52-54	C
48-51	C-
45-47	D+
42-44	D
Below 42	F

COURSE SCHEDULE

Topics^ and Tentative Schedule^^

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

Dates: Topic Chapters^

1/21-1/23 *Introduction and Quantitative tools* (Chs. A 1, 2; L 8)

1/21-2/11 *Linear Programming I (Graphical Solution)* (Chs. A 1, 2; L 8)

2/4-2/20 *Linear Programming II (Multivariate and Computer Solutions)* (Chs. A 3, 4, 5; L 9)

2/18 *Midterm*

2/20-3/3 *Inventory Models* (Chs. A 10; L 15 and elements of L 16)

2/25-3/5 *Project Management with PERT and CPM* (Chs. A 9; L 14)

3/17 *Final*

^The references are to chapters^, in textbooks of Anderson et al. and Lapin and Whisler.

^^This is not an exclusive list of topics to be covered in this course. If time permits, I will accelerate the presentation. Alternatively, if necessary, pace and intensity of coverage may be traded off to assure greater comprehension.

Special Dates:
Presidents' Day Holiday: February 17.
Midterm: February 18
Spring Recess: March 10-14.
Final: March 17
Flex. Sched. Mathematical and Statistical Software for Modeling and Analysis.

Updated: January 12, 2020. The syllabus may be updated in the future as necessary. Expect possible changes, and follow announcements regarding them on CANVAS.