LINCOLN UNIVERSITY

BA 360

Quantitative Methods for Business and Finance Management

COURSE SYLLABUS

Department of Business and Economics

Spring, 2010

Lecture Schedule: Thursday, 3:30 PM – 6:15 PM
Credit: 3 units
Instructor: Prof. Sergey Aityan
Office Hours: Monday, 11:00 AM – 12:00 PM
Thursday, 11:00 AM – 12:00 PM
Students are advised to schedule appointments on the appointment list on the board at the professor's office that will ensure exact appointment time without waiting.
e-mail: aityan@lincolnuca.edu
☎**:** (510) 628-8016

Textbook:

1. **Textbook on Quantitative Methods:**

Louise Swift and Sally Piff, (2010), "Quantitative Methods for Business, Management, and Finance," Third Edition, Published by Palgrave Macmillan
ISBN 13: 978-0230218246
ISBN 10: 0230218245

2. **Textbook on Portfolio Optimization:**

Frank J. Fabozzi, Peter N. Kolm, Dissislava A. Pachamanova, and Sergio M. Focardi (2007), "Robust Portfolio Optimization and Management", John Wiley & Sons
ISBN-978-0-471-92122-6).

3. **Course lectures notes:**

Sergey Aityan, "Quantitative Methods for Portfolio Optimization and Management," the comprehensive online course notes, http://elearning.lincolnuca.edu.

Last Revision: January 5, 2010

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 models, forecasting, transportation, and assignment models, Markov analysis, stochastic equations, statistical quality control and others (3 units).

Prerequisites: MATH 10 or Math 15.

COURSE OBJECTIVES
The course focuses on portfolio optimization and management. The major objective of the course for students is to understand the fundamental concept of investment portfolios and learn and apply quantitative methods to estimate and optimize the expected return and minimize risk associated with market uncertainty.

PROCEDURES AND METHODOLOGY
Lecture method is used in combination with a supervised business case studies. The emphasis will be on learning by doing. Every student must participate in an intensive classroom activity.

COURSE PROJECT
Every student must complete and submit a course project.

REQUIREMENTS
Continuous assessment is emphasized. Written or oral quizzes will be given every week. Students must complete all assignments and take all quizzes, mid-term exam and final exam on the dates due. Plagiarism will result in the grade "F" and a report to the administration.

ATTENDANCE
Students are expected to attend each class session. If you cannot attend a class due to a valid reason, please notify the instructor prior to the class.

EXAMS
Both, midterm and final exams are structured as written essay to answer to the given questions and solve problems. The essay must be written structurally with clear logical presentation of the answers. Graphs, charts, tables, and other supporting illustrations are required if needed. Examples to illustrate the answers are required.
Exams will cover all assigned chapters and any additional readings or supplementary materials covered in class. The exams are neither "open book" nor "open notes."

GRADING

Activity	Time	Percent
Quizzes, home tasks, and classroom activities	Every week	20%

Course project		20%
Mid-term exam	Second part of March	30%
Final exam	Last week of the course	30%

SCORING
All results of written test will employ a numerical scoring system that is convertible as indicated below.

94-100	A
90-93	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+

73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
0-59	F

COURSE SCHEDULE

Lectures	Topic	Chapters
1	About the Course Investment Portfolios	 Ch. 1
2	Fundamentals of Mathematical Methods	Ch. 2
3	Fundamentals of Statistics	Ch. 3
4	Mean-Variance Analysis: Overview	Ch. 4
5	Theory of Portfolio Risk Measures	Ch. 5
6	Portfolio Selection in Practice	Ch. 6
7	Classical Asset Pricing	Ch. 7
8	Forecasting Expected Return and Risk	Ch. 8
9	(a) Review (b) Midterm Exam	Ch. 1-8
10	Robust Estimation	Ch. 9
11	Robust Framework for Estimation	Ch. 10
12	Bayesian Approaches and Black Litterman Model	Ch. 11
13	Mathematical and Numerical Optimization	Ch. 12
14	Optimization Under Uncertainty	Ch. 13
15	Implementing and Solving Optimization Problem in Practice	Ch. 14
16	(a) Review (b) Comprehensive Final Exam	Ch. 1-14

OTHER COMMENTS

- 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.
- If you miss a class, you are responsible for getting notes/slide printouts on the material covered from a classmate or the instructor.
- To avoid distracting noise in class, cellular phones must be turned off or the ringing mode silenced.

- Questions and comments during the class are welcome. Do not hesitate to ask questions – do not leave anything unclear for you.

MODIFICATION OF THE SYLLABUS.
The instructor reserves the right to modify this syllabus at any time during the semester. Announcements of any changes will be made in a classroom.