**Course Syllabus for BA 5501 Quantitative Analysis for Business Decisions I (1.5 Credits)  
Master of Science Program in Financial Investment and Risk Management  
NIDA Business School  
Instructor:** Arthur Dryver, PhD  
**E-mail:** dryver@gmail.com

**Overview**

The course aims to help students develop quantitative skills that are necessary to conduct quantitative investment analysis and financial risk management. The course will teach students on quantitative methodologies and show how these tools can be applied in financial analysis. Students will be equipped with important tools and the skills critical for their further studies as well as their careers in finance.

**Course content and topics**

This course consists of the following broad topics:

* Probabilities & Statistical Concepts
* Statistical Inference (Sampling, Estimation, and Hypothesis Testing)
* Classical Linear Regression Model (CLRM)

**Class Schedule**

*\*Some sessions must be rescheduled. My apologies in advance.*   
Venue: TBA

|  |  |  |
| --- | --- | --- |
| Session | Topics (Very rough guide on timing) | Required Readings |
| 1 | Course Introduction & Review of Mathematics | DMPR: Ch3, 4 |
| 2 | Probability, and Statistics | DMPR: Ch3, 4 |
| 3 | Common Probability Distributions &  Sampling and Estimation | DMPR: Ch5, 6 |
| 4 | Hypothesis Testing | DMPR: Ch7 |
| 5 | Workshop I (Lab Session – will discuss about laptop in class) |  |
| 6 | Linear Regression Model | DMPR: Ch8 |
| 7 | Multiple Linear Regression Model | DMPR: Ch9.1-9.3 |
| 8 | Workshop II (Lab Session again perhaps laptop in class) & Course Conclusion |  |

**Method of Assessment**  
Final Exam 50%, Project 35%, Online Homework 10%, Class Participation 5%

**Reading List**

Required Text

DeFusco, R.A., McLeavey, D.W., Pinto, J.E. and Runkle, D.E., 2015, "Quantitative Investment Analysis," 3rd edition, CFA Institute Investment Series, Wiley. -Main text

Brooks, C., 2014, “Introductory Econometrics for Finance,” 3rd edition, Cambridge University Press.

Supplementary Text

DeFusco, R.A., McLeavey, D.W., Pinto, J.E. and Runkle, D.E., 2015, "Quantitative Investment Analysis Workbook," 3rd edition, CFA Institute Investment Series, Wiley.

Gujarati, D. and Porter, D., 2008, “Basic Econometrics,” 5th ed., McGraw-Hill Education.

Miller, Michael B., 2013, “Mathematics & Statistics for Financial Risk Management,”2nd ed., Wiley.

For advanced level (beyond the scope of this course):  
Campbell, J.Y., Lo, A.W., and MacKinlay A.C., 1996, “The Econometrics of Financial Markets,” 1st edition, Princeton University Press.