



Department of Economics and Finance

ECON\*3660  
Economics of Equity Markets  
Winter 2014



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Lectures: Tuesday, Thursday. 4:-5:20pm

Office Hours: Monday and Wednesday: 3.00pm to 5.00pm.  
Tuesday and Thursday: 2pm to 3.45pm.

It is your responsibility as a student to be aware of and to abide by the University's policies regarding academic misconduct, e-mail communication, maintaining copies of out-of class assignments, what to do when you cannot meet a course requirement and the drop date for this semester. To better understand these policies, visit:

[https://dev.web.uoguelph.ca/economics\\_d7/important-notice-about-students-responsibilities-and-university-policies](https://dev.web.uoguelph.ca/economics_d7/important-notice-about-students-responsibilities-and-university-policies)

I will start with these quotes from Ben Graham and one from Warren Buffett that describe my investing philosophy:

*"...there is a special paradox in the relationship between mathematics and investment attitudes on common stocks, which is this: Mathematics is ordinarily considered as producing precise and dependable results; but in the stock market the more elaborate and abstruse the mathematics the more uncertain and speculative are the conclusions we draw therefrom. In forty-two years of Wall Street experience and study I have never seen dependable calculations made about common-stock values, or related investment policies, that went beyond simple arithmetic or the most elementary algebra. Whenever calculus is brought in, or higher algebra, you could take it as a warning signal that the operator was trying to substitute theory for experience, and usually also to give to speculation the deceptive guise of investment."*

Benjamin Graham, **The Intelligent Investor**,  
4<sup>th</sup> revised edition, Harper Business, 1973, p.  
321.

*"...every corporate security may best be viewed, in the first instance, as an ownership interest in, or a claim against, a specific business enterprise. And if a person sets out to make profits from security purchases and sales, he is embarking on a business venture of his own, which must be run in accordance with accepted business principles if it is to have a chance of success."*

Benjamin Graham, **The Intelligent Investor**,  
op. cit., p. 286.

*"The speculative public is incorrigible. In financial terms it cannot count beyond 3. It will buy anything at any price, if there seems to be some 'action' in progress. It will fall for any company identified with 'franchising', computers, electronics, science, technology, or what have you, when the particular fashion is raging."*

Benjamin Graham, **The Intelligent Investor**,  
op. cit., p. 245.

*"Wall Street has its reasons that the reason doesn't understand." A paraphrase on Pascal by Benjamin Graham, **The Intelligent Investor**, op. cit., p. 216.*

*"To invest successfully, you need not understand beta, efficient markets, modern portfolio theory, option pricing or emerging markets. You may, in fact, be better off knowing nothing of these. That, of course, is not the prevailing view at most business schools, whose finance curriculum tends to be dominated by such subjects. In our view, though, investment students need only two well-taught courses- How to Value a Business, and How to Think About Market Prices.*

*Your goal as an investor should simply be to purchase, at a rational price, a part interest in an easily-understandable business whose earnings are virtually certain to be materially higher five, ten and twenty years from now. Over time, you will find only a few companies that meet these standards- so when you see one that qualifies, you should buy a meaningful amount of the stock. If you aren't willing to own a stock for ten years, don't even think about owning for ten minutes. Put together a portfolio of companies whose aggregate earnings march upward over the years, and so also will the portfolio's market value."*

Warren Buffett. Berkshire Hathaway  
Chairman's Letter- 1996, p.13.

*"Most of what is taught about investing in school is theoretical nonsense. There are very few rich professors". Morgan Housel in "50 Unfortunate Truths about Investing", Motley Fool, November 14, 2012.*

## COURSE OUTLINE

Textbook:

*Investment Analysis and Portfolio Management*. 1st Canadian Edition by Reilly, Brown, Hedges and Chang (hereafter RBHC 1cdne), Nelson, 2010.

This course surveys some of the economics literature on the determination of equity prices and the operation of the stock market. We will review recent developments in portfolio theory which explain investors' portfolio choices. We will outline the principles needed for analyzing common stock prices. We will study portfolio management, the evaluation of portfolio performance and international investing. The recent (and, in my opinion, still ongoing) crisis has proven that much finance theory dealing with risk-return and market efficiency needs to be rebuilt-a job that will occupy YOUR generation. When it comes to investing in equities, academics value complexity when none is needed or desirable (now re-read the quotes from Ben Graham, Warren Buffett and Morgan Housel at the top of this outline! And take a good look at this list by a guy, Morgan Housel, I admire a lot, in particular item number 17: <http://www.fool.com/investing/general/2012/11/14/50-unfortunate-truths-about-investing.aspx>). As a result, I will spend as much time as we can afford studying behavioral finance. We will **not** learn how to make a bundle by day trading and retire at age 25, but what you learn in this course will make you far better investors than most. The course very much has a **value investing long term bias** (the only sensible way of investing) and deals **specifically and exclusively with common stocks**.

The course will consist of three hours of lectures every week spread over two classes. At various points in the semester we will host 3 or 4 senior finance practitioners.

**1. Grades** will be determined as follows:

1. Two exams worth 20% each  
40%

Midterm Exam is on Thursday February 6<sup>th</sup> in class.  
Final is on ????

2. First Security Analysis Report, due, Feb. 13<sup>th</sup>, 2014  
20%

3. Group presentation on your Investment selections (5 minutes per group of two)  
20%

Tuesday, March 25 <sup>th</sup>	Groups 1-13
Thursday, March 27 <sup>th</sup>	Groups 14- 27
Tuesday, April 1st	Groups 28-41
Thursday, April 3rd	Groups 42-50.
  
4. Final Portfolio Report with Peer rating form, due Thurs. Apr. 3rd 20%

**Please note that both exams are compulsory.** I will give an opportunity for rewriting the midterm **only** to those students who have a medical emergency (**with a certificate signed by a medical doctor**) or for compassionate reasons (**with the proper U of G documentation from counselors**). **Without this documentation the grade for a missed midterm is zero. You are allowed to bring to the exam room the course textbook and your course notes ONLY.**

**Course Evaluation:** You will be asked to complete an evaluation of this course at some time during the last two weeks of the semester. The department of Economics policy regarding the conduct and use of these evaluations will be found at:

<https://www.uoguelph.ca/economics/course-evaluation>

## **2. Portfolio Management Exercise**

In order to make you practice what we learn in this course, you will all participate in a **portfolio management exercise** using [www.globeinvestor.com/watchlist](http://www.globeinvestor.com/watchlist) . For this exercise, you will form portfolio management groups of **two students**. You will start investing a fictitious \$100,000 (sorry about that) on Monday, January 20th. This exercise lasts 9 weeks to March 21st.

Your group of two will invest in, and keep track of, **1 stock** (yes, you read this right: ONE stock) **and 2 ETFs (the ETFs are the same of everyone in the class) that I will assign to you.** I am the stock picker. I will match each group of two students to a list of 50 stocks posted on Course Home. I will post on Course Home this list of stocks and two ETFs with group numbers. Once you know your group number refer to this list on Course Home and get going! Please remember that without a group number you have no stock and hence, as far as I am concerned, you are not in this class.

**Your team will keep track of your portfolio on [www.globeinvestor.com/watchlist](http://www.globeinvestor.com/watchlist) or another stock tracking template of your choice (my favourite is Globe Investor.com).** You must include photocopies of the printouts in your two reports (due on Feb. 13rd, and Apr. 3rd, 2014). Each team

has \$100,000 to invest so you will have to agree on how to allocate your scarce money between the 1 stock and 2 ETFs. Here are the steps you must follow for this part of the course:

1. Register your group and your portfolio on [www.globeinvestor.com/watchlist](http://www.globeinvestor.com/watchlist) or on another stock tracking programme of your choice.
2. Each group of two students is assigned ONE stock and two ETFs. These stocks and ETFs are traded on the TSX, NYSE/Amex and NASDAQ.
3. In the final presentations in the last two weeks of the semester you will use the information from your Globe Investor Watch List to show the class how your portfolio of 1 stock and 2 ETFs fared during these 9 weeks. I don't expect miracles; value investors invest for decades before seeing the results of their wisdom, or as Warren Buffett says "my horizon is forever". Later in the semester, I will explain what performance measure I expect you to calculate to evaluate your performance.

- **Portfolio Report 1 due February 13rd, 2014.**

In this report of FIVE pages maximum plus appendixes where appropriate (use double-space; Georgia font; size 12), each student in a group of two plays a different role. You will follow an approach used very successfully by PIMCO, a famous money management firm based in Newport Beach, California (PIMCO calls this their "culture of constructive paranoia") and do a "**premortem analysis**" (this a technique invented by Gary Klein-Google him) of why the investment you are contemplating failed!! In other words, one of you will pretend that you have seen the future and this investment failed (it's cruel to start this way but necessary to see things clearly). For the first report due on February 13rd, one of you will write the reasons why they failed and the other member of the team will argue that they were a success. Or put another way, **for the first report, one team member will argue FOR the stock pick, the other member of the team will argue AGAINST. The two ETFs do not need to be dissected in the same way (ie, no pre-mortem analysis on the ETFs).** In this first report on the **stock** that I gave you, you will cover topics 1 (business model), 2 (value proposition), and 3 (competitive analysis using Porter's 5 Forces model) from the template I give you on page 10 of this course outline. **The student taking the "con" view will state his thinking on topics 2 (value proposition) and 3 (competitive analysis) and integrate his/her material with his/her colleague who takes the "pro" side.** There is nothing to do for the ETFs, except keep track of their performance over the 9 weeks of the game. The best way to present this material on your stock is to include the "pro" and "con" views under each heading: value proposition, and competitive analysis, NOT a "pro" and "con" section separately.

- **Portfolio Report 2 due April 3rd, 2014.**

In this report of TEN pages maximum plus appendixes where appropriate (use double-space; Georgia font; size 12) you will follow exactly the template on page 10 (sections

1-8). You will need to rewrite, somewhat, sections 1-2-3 in light of my comments on your first report. For this report drop the “con” view. See pp.12-13 for a list of useful websites to obtain free investment information. Of course talk to me when you need help!

I would like to make a few important points about the portfolio management exercise:

1. Although earning a superior return over the 9 weeks that the exercise lasts is rewarding, this is **not** what I am looking for. I am assigning to you one stock and two ETFs so that you learn how to be **long-term** investors. This means that you have to develop such qualities as independent thinking, patience, organization, courage of your convictions, and above all discipline. Professionals do not buy stocks on a whim; they analyze them thoroughly and then buy them at the appropriate moment (or as Tony Arrell, the Chairman of Burgundy Asset Management that you will meet later this semester says “you build your dream team and when the stocks are ‘on sale’ you back up the truck”). Thus, **I will not grade you on results, but on the quality and depth of your analysis.** Read this sentence again and think about it!
2. Your analysis **must be** rigorous and convincing. **Do not cut and paste from professional security analysts’ reports.** There is a strong probability that I too have read them and that I do not like them (especially if they are sell-side reports). Cutting and pasting is considered to be plagiarism. At Guelph the penalties for this are severe. So don’t take chances and ruin your future in this wonderful industry for the sake of a trivially higher grade (to reinforce this point I will tell you that when HR people call me about one of my former students to obtain a reference they almost never ask about the grade my former student received; they ask FIRST about their ethics, reliability and punctuality). Read Appendix C on the CFA Institute Code of Ethics in our text, pp.649-650 or on the text website
3. I expect that each member of your group **will participate EQUALLY in the work** done in this course: analyzing your stock, presenting your work to the class, and writing the two reports. Each member of your group will receive the same grade for **all group work** unless I am advised in the peer rating form that each group will file with me at the end of the semester, that the other member did not pull his/her weight. **In that case, I will adjust downward this student’s grade. Please come and discuss with me any group problems as soon as they occur. You may also, after discussing it with me, fire the non-performing member. In this case, this student may end up on his/her own.** See p.14 for more information on “How to fill the Peer Rating Form.”

## I. INTRODUCTION

### **Week 1: The practical lessons of history and some institutional background**

Jan 7, 9 RBHC 1cdn ed, Chapters 1, 4.

Form your portfolio management groups: 2 students per group. Send me the names or give them to me in class using the form at the back of this course outline. **This is due January 16<sup>th</sup>. I will assign you a group number and you will know what stock you will study by referring, on Course Home, to the list I will publish for the 2014 version of this course.**

## II. INVESTMENT TECHNOLOGY: Portfolio Theory and Risk-Return Models

### **Week 2: How to reduce risk? Diversification and portfolio analysis**

Jan 14, 16 RBHC 1cdn ed, Chapter 6.

By now I have posted on Course Home the group numbers and the one stock that each group will study, as well as the two ETFs for everyone. In class, I will assign a group number to each pair of students in the class. You may ask me to assign to you a particular group number because you are interested in the stock attached to that group number.

### **Week 3: How to model risk? The CAPM and the APT.**

January 21, 23 RBHC 1cdn ed, Chapter 7.

The **portfolio management exercise begins on January 20th**. For the first report (due February 13rd) one member of each team takes the pro side; the other takes the con side for each stock. You have registered your stock and ETFs on [www.globeinvestor.com/watchlist](http://www.globeinvestor.com/watchlist) or another stock tracking software of your choice.

**Week 4: Market Efficiency and what this means for the behavior of stock prices**

January 28, 30 RBHC 1cdn ed, Chapter 5, pp.105-121; pp.123-127.

**Week 5: The Inefficient Stock Market and Behavioral Finance**

Feb 4, 6 RBHC 1cdn ed, Chapter 5, pp.121-123.

**Midterm February 6<sup>th</sup> in class on Chapters 1, 4-5 (to page 121; and pp.123-127), 6-7.**

**Week 6: Behavioral Finance and Value Investing**

Feb 11, 13 RBHC 1cdn ed, Chapter 5 pp.121-123 as well as class notes

**First Security Analysis Report due Feb. 13<sup>rd</sup>, 2014.** In this report each team of two will describe in a maximum of 5 pages each:

**Business model** of your stock.

**Value proposition** of your stock (both "pro" and "con").

**Competitive analysis** of your stock (both "pro" and "con"): here is your chance to show me that you learnt something in Econ 4800 Strategic Management (Porter's 5 Forces model, possibly core competencies) if you have taken the course. Has the business built deep "moats" around its business? Are these moats deep, and filled with man/woman eaters? How long-lasting are they? If you haven't taken Econ 4800 yet come and talk to me for a quick explanation.

**Week 7: Mid Winter Break**

**III. SECURITY ANALYSIS AND STOCK VALUATION**

**Week 8: Fundamental analysis and common stock valuation: Theory and practice.**

February 25, 27 RBHC 1cdn ed, Chapters 8-9, Web Chapter 19.

**Week 9: More on common stock valuation**

Mar 4, 6 RBHC 1cdn ed, Chapters 8-9, Web Chapter 20.



#### IV. INVESTMENT STRATEGY

**Week 10: Investment planning and investment performance evaluation.**

Mar 11, 13 RBHC 1cdn ed, Chapters 15 (skip Appendix pp. 488-489),  
And 17-18.

**Week 11: International diversification**

Mar 18, 20 RBHC 1cdn ed, Chapter 3 and class notes.

**Portfolio management exercise ends March 21.**

**Week 12: Project Presentations**

Mar 25 Investment Project Presentations: 5 minutes maximum per group;  
no questions. **GROUPS 1-13.**

Peer rating forms are due with your final portfolio report.

Mar 27 Investment Project Presentations: 5 minutes maximum per group; no  
questions. **GROUPS 14-27.**

**Week 13: Project Presentations continued.**

Apr. 1 Investment Project Presentations: 5 minutes maximum per group;  
no questions. **Groups 28-41.**

Apr.3 Investment Project Presentations: 5 minutes maximum per group;  
no questions. **Groups 42-50.**

**Final Portfolio reports are due** (please follow **EXACTLY** the format on p.10 of this course outline) on **April 3rd**. Peer rating forms are due at the same time (one form per group, signed by **both** members).

**Final exam** is ????? on Chapters 5-6-7, 15, 17-18.

## FORMAT FOR PORTFOLIO MANAGEMENT EXERCISE REPORTS

1. Business Model (what does this firm do?)
2. Value Proposition (what makes this firm different from its competitors?)
3. Competitive Analysis (use Porter's 5 Forces model; no SWOT!!!). How deep are the "moats" around its businesses? How secure and long lasting are they?
4. Quality of Management:
  - 4.1 The Board's composition and independence
  - 4.2 Do managers act with integrity and intelligently?
  - 4.3 Is management candid with its shareholders?
  - 4.4 Does management allocate capital rationally?
  - 4.5 Does management have "skin in the game"?
5. The numbers: Length of time dividends have been paid, Dividend per share in dollars and cents, Dividend Payout ratio, Dividend yield, Growth in dividends, Price/Book, Price/Earnings; ROE, Margins, Leverage (Debt/Equity), Return on Capital Employed (ROCE). Compare these numbers with the competition. Present all these numbers in a table.
6. Intrinsic Value using dividends paid. Is there a margin of safety? How cheap is the stock? Remember this pearl of wisdom from Warren Buffett: "It is far better to buy a wonderful company at a fair price than a fair company at a wonderful price." Show this information in a table. To calculate intrinsic value and the **margin of safety** (Margin of Safety =  $\frac{\text{Market Price} - \text{Intrinsic Value}}{\text{Market Price}}$ ) **run 3 scenarios: low interest rate (1.75%); normal interest rate (2.75%); high interest rate (3.10%)**. Yes you are using the long term Canada 10 year bond rate, not the WACC and the CAPM!!! Buffett doesn't either. Use a two-stage Free Cash Flow discount model.
7. Portfolio Performance compared to the benchmark; since we are Canadians investors **the benchmark is the TSX-S&P Composite index** over that period. Use the Sharpe ratio. The risk-free rate is the rate for Canada 10-year bonds. This is a yearly rate so you will need to adjust it for the 9 weeks out of 52 weeks that you invested for this exercise.
8. Conclusions / Pearls of Wisdom / Lessons Learnt.

### Notes:

1. For the first report due February 13rd write ONLY on the first three sections in the outline above. The member of the team who takes the opposite view should focus his/her write-up on the value proposition and competitive analysis (sections 2 and 3). This report must be no more than 5 pages plus a few exhibits.
2. For the final report due April 3rd you must give me your write-up on the entire

template (items 1-8) and omit the "con" side. Your report must be no more than 10 pages plus exhibits.

3. Show me your calculations for intrinsic value and for the Sharpe ratio in the exhibits.

### **WHAT I AM LOOKING FOR IN GROUP PRESENTATIONS**

Speaking effectively and forcefully in front of a public is one of the most important skills needed by business executives who aspire to senior positions. An effective presentation explains, clarifies and inspires. Here are some guidelines outlining things I look for in a group presentation:

1. (10 points) How does the group look? Do they look professional or sloppy?
2. (10 points) Have they introduced themselves to the audience, so that we know who is who? (I want to see your names **3 times**: 1. when you introduce the members of your group; 2. in the presentation outline next to the topic that you will be discussing; 3. on each of your slide).
3. (10 points) Do they have an outline of their talk, so that we understand clearly what they are trying to achieve?
4. (10 points) Do the members maintain eye contact with us in the audience, as if they were speaking to each of us individually?
5. (10 points) Are their voices lively and clear, or monotonous and dull?
6. (10 points) Is the presentation visually attractive, unusual, clever, so that our attention is engaged all the time and we retain most of their message?
7. (100 points) Do they present the material and the message slowly and clearly? Do they make effective use of course concepts? Is the presentation interesting and meaningful?

## **WHERE TO GET FREE INVESTMENT INFORMATION**

1. [www.globeinvestor.com](http://www.globeinvestor.com)
2. [www.canoe.ca](http://www.canoe.ca)
3. [www.sedar.com](http://www.sedar.com)
4. [www.edgar-online.com](http://www.edgar-online.com)
5. [www.hoovers.com](http://www.hoovers.com)
6. [www.bloomberg.com](http://www.bloomberg.com)
7. [www.zacks.com](http://www.zacks.com)
8. [www.wallstreetcity.com](http://www.wallstreetcity.com)
9. [www.bigcharts.com](http://www.bigcharts.com)
10. [www.stocktools.com](http://www.stocktools.com)
11. [www.iqc.com](http://www.iqc.com)
12. [www.traders.com](http://www.traders.com)
13. [www.turtletrader.com](http://www.turtletrader.com)
14. [www.vectorvest.com](http://www.vectorvest.com)
15. For information on betas look up [www.reuters.com](http://www.reuters.com)
16. For information on Canadian companies' betas and financials look up:  
[www.fpinfomart.ca](http://www.fpinfomart.ca)
17. For information on short interest: [www.TSX.com](http://www.TSX.com) and  
[www.bloomberg.com](http://www.bloomberg.com)

18. For Insiders' Trading Reports: [www.SEDI.ca](http://www.SEDI.ca)
19. For information on management: [www.zoominfo.com](http://www.zoominfo.com)
18. For information on management: [www.corporateinformation.com](http://www.corporateinformation.com)
19. For Insider ownership for US- listed companies: SEC filings Schedule 14A.
20. For information and clarification on SEC filings: [www.footnoted.org](http://www.footnoted.org)
21. For information on insider trading: [www.inkresearch.ca](http://www.inkresearch.ca)
22. For critical views on Media: [www.tvnewser.com](http://www.tvnewser.com)  
on Pharma: [www.corante.com/pipeline](http://www.corante.com/pipeline) and  
[www.pharmagossip.blogspot.com](http://www.pharmagossip.blogspot.com)  
  
on Finance: [www.wallstreetfolly.com](http://www.wallstreetfolly.com) and  
[www.dealbreaker.com](http://www.dealbreaker.com)  
  
on Airlines: [www.planebuzz.com](http://www.planebuzz.com)  
  
on Retail: [www.walmartwatch.com/blog](http://www.walmartwatch.com/blog)  
  
on Tech: [www.calacanis.com](http://www.calacanis.com) and  
[www.fakesteve.blogspot.com](http://www.fakesteve.blogspot.com)
23. For information of what employees say about their employers:  
[www.glassdoor.com](http://www.glassdoor.com); [www.glassdoor.ca](http://www.glassdoor.ca); [www.careerbliss.com](http://www.careerbliss.com).
24. On analyzing the fine print in company filings SEC 8-K forms where  
companies publish the bad news in the hope that no one will notice:  
[www.Footnoted.com](http://www.Footnoted.com) (see also number 22)

**How to fill the Peer Rating Form (this is due with your final report)**

1. Ideally, your group functioned well and you shared the work load (the two reports in the portfolio management exercise and the final presentation) equally, i.e. in a group of 2, you assigned each other 50%.
2. In cases where the work load was not shared equally, the student who has the highest percentage will receive the unaltered total mark for the two portfolio reports and group presentation. The other student, who has not shared equally the work load, will receive a discount from the assigned grade. The discount is calculated as follows.

For example, assume the following effort distribution:

Student 1	70%
Student 2	30%

Student 1 will receive his/her full unaltered grade for the portfolio reports and the final presentation. Student 2 will receive 30%/70% of the full unaltered grade. In other words, this is NOT a zero-sum game where the student who has the 70% weight wins the points lost by the student who has the weight of 30%. Make sure you understand how this works!

3. Each student in the group must sign the group sheet and return it to me with your final portfolio report.

**PEER RATINGS**  
**ECON\*3660 ECONOMICS OF EQUITY MARKETS**

(due with your final portfolio report)

**GROUP NUMBER:** \_\_\_\_\_

**RATINGS:**

If your grade for group work is a 100%, how would you allocate this mark to reflect the amount of work done by each group member? For example, in a group of 2, each member participating equally would receive a mark of 50%, for a total of 100%. Please file one form per group. Each member must sign this form to show agreement. Read my explanations on "How to fill the Peer Rating Form".

Names

Mark

Signature

1. \_\_\_\_\_

2. \_\_\_\_\_

**COMMENTS:**

**Membership in your group. Please print your names very legibly** and hand this form to me January 16th. I will give you your group number that will determine which stock and ETFs you will study.

1.-----

2.-----



The Department of Economics and Finance *Learning Objectives* (skills and knowledge competencies) for this course:

**Skills:**

1. **Written communication**-Econ 3660 requires the writing of two security analysis reports. The first report has five pages, the second 10 pages.
2. **Oral communication/presentation**-there is a 5 minute presentation to the class at the end of the semester on the security analysis report.
3. **Numerical problem solving**-understand Markowitz portfolio optimization; the capital asset pricing model; arbitrage pricing theory; calculate the valuation of a common stock; calculate the investment performance of a portfolio and evaluate it.
4. **Problem solving in a real world context**-groups of students analyse the business of a firm that I have picked for them and evaluate its performance for inclusion in a stock portfolio. They learn how to calculate the intrinsic value of this stock using a two-stage free cash flows model with various scenarios for the industry and the economy. They compare and measure its performance with that of the S&P-TSX benchmark.
5. **Group work**-the group of two students analyses one firm using a very specific methodology given to them. This work results in 2 reports and one class presentation.
6. **Computer skills**-use of Word and Excel; use of Power Point for the end of semester presentation.

**Knowledge:**

- 1. Mathematical methodology**-understand Markowitz optimization (quadratic programming); understanding of the CAPM and the APT.
- 2. Statistical and econometric methodology**- understand basic multiple regression analysis; hypothesis testing; confidence intervals. Be able to discuss results calculated with these tools.
- 3. Microeconomic modeling**- understand and know how to calculate the CAPM and the APT. Understand efficient markets and developments in behavioural finance.
- 4. Understanding of specific markets**-analyse the markets in which the assigned firm operates; use Porter's Five Forces model.
- 5. Historical context**-understand the historical background of the firm assigned to the group as well as its industry background.
- 6. Economic policy and regulation**-understand the regulatory and societal context in which the assigned firm operates. Because I assign many international firms, students learn about their backgrounds in other countries. They learn how to explain these issues to the class.
- 7. Financial asset pricing and risk analysis** – understand and use Markowitz optimization for minimizing portfolio risk; understand and use the CAPM and the APT.