

Investment Management - Syllabus

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Code: 28C0030, 6 ECTS, Spring term 2019, Period III, Otaniemi Campus

Lectures: Peter Nyberg, Exercises & Administration: Wenjia Yu

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1. Language

The course is taught in English. This means that all lectures, exercises, class discussions, and the exam are held in English. You may answer exam questions in English only.

2. Locations and Times

A. Lectures

Lectures are on Tuesdays (15:15-17:00) and Thursdays (15:15-17:00) in B-Sali/Y203a, Otakaari 1.

1. Please check schedule for time exceptions.

B. Exercises

On Mondays (10:15-12:00) and Wednesdays (10:15-12:00), B-Sali/Y203a, Otakaari 1.

C. Introduction session

The course begins with an Introduction Session on Monday 7.1. Participation is highly recommended but not mandatory.

D. Other important places

Finance Department

Chydenia 2nd floor, Töölö Campus

3. Instructors

A. Lectures

Peter Nyberg

Department of Finance, Chydenia, G2.13

B. Exercises, game, and administration

Wenjia Yu

Department of Finance, Chydenia, H2.32

Office hours:

- After the exercise sessions at Otaniemi
- Wednesdays 15.00-16.00 in H2.32, Chydenia

Emails: firstname.lastname@aalto.fi

4. Course Web Page

When in doubt about something, **always check if this site can help**. Be sure to check the course website regularly for possible updates.

A. Location

The address of the course website in MyCourses is

<https://mycourses.aalto.fi/course/view.php?id=19963>

B. Content

The website has current announcements on practical issues, all material related to the lectures and exercises, as well as other teaching resources.

5. Status in Finance Studies

A. Required

The course is part of mandatory basic studies for all students with Finance specialization.

B. Pre-requisites

Participants are assumed to be familiar with the material in Introduction to Finance (either 28A00110 or 28A00210), Principles of Economics (31A00110 or 31A00210), any introductory course in econometrics (Econometrics for Finance, 28C00200 or Econometrics, 30C00200) as well as with elementary mathematics and statistics. The Quantitative Review (Appendix A, pp. 1007-1040 in the 6th ed.) in the Course textbook covers all the statistics that are needed, and more.

C. Recommended sequence of studies

This applies to the new degree structure:

28A00110 (or 28A00210) Introduction to Finance
1st year spring

28C00100 Corporate Finance
2nd year fall

28C00800 Financial Markets and Institutions
2nd year fall

28C00200 Econometrics for Finance
2nd year fall

28C00300 Investment Management
2nd year spring

D. Relation to further studies

Like other intermediate studies in Finance, Investment Management is not focused on any single topic. Rather, there is a unifying theme of professional investment management. Together with Corporate Finance and Financial Markets and Institutions it forms the core of knowledge on which more specialized courses build on.

A major part of the material covered in this course is taken as given in further finance studies. Examples of Master's program courses that build on this course are Portfolio Management (28E34600) and Advanced Investment Theory (28E00300)

6. Enrollment

You need three registrations for the course:

- 1) Regular course registration via WebOodi,
- 2) Group enrollment in MyCourses
- 3) Sign up of your team to the investment game on Stockfuse website

All members of your group should use the same account on Stockfuse.

A. Trading account for the investment game

Guidelines for setting up the account for investment game will be provided in MyCourses, together with game play instructions.

B. Changing group

Before Wednesday 16.1. 16:00 (Deadline for Investment strategy)

Just change your group in MyCourses.

After Wednesday 16.1. 16:00 (Deadline for Investment strategy)

Permission from course organizers is required. Contact Wenjia Yu for late changes.

7. Purpose

The objective of the course is to introduce the key theories and observations in the area of financial markets. The course covers security markets and instruments, pricing of capital assets, and portfolio investment tools. It is not intended as the first finance course.

8. Description & Objectives

The course teaches specific skills as well as helps students develop a broader understanding of financial markets. Both areas are needed in professional investment portfolio management.

A. Specific analytical tools

The specific skills lay the foundations for analytical tools considered 'industry standard' in the asset management business. These tools (e.g. Sharpe's Index), and their extensions, are used daily in practice. One must understand how to use these tools and how they can be implemented in practice.

B. The big picture

A broader understanding of financial markets is also needed in a changing world, where existing practical tools and modes of implementation do not always work. A successful investment professional needs to adapt to new situations and commit to lifelong learning. One must improve existing practices and sometimes create entirely new tools (e.g. measuring the performance of hedge funds). A systematic approach that is built on understanding the theory and empirical features of financial markets is needed in that task.

C. Personal investments vs. professional career

It is easy to imagine how one may succeed in financial investments by simply having good luck. Some people may even get lucky several times. But, without knowing what luck will bring you in the financial markets, you can substantially increase your chances of succeeding as an investor by studying the subject. However, the greatest benefit from studies is in the investment profession, where a successful career today always requires thorough knowledge of the subject.

9. Requirements & Grading

A. Passing the course

The final grade (0, 1, 2, 3, 4 or 5) is based on total points (max 100). Class work accounts for 50% of the total points and the final exam for the other 50%. The course organizers may also announce opportunities for extra credit, i.e. bonus points. The maximum points for the components are:

Exercise sets	25 points
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Investment game 25 points

Final exam 50 points

To pass the class you need to have at least 50 points combined and at least 20 points (40%) from the final exam. You are not required to get any minimum amount of exercise or investment game points. Your final grade is based on the standard scale:

90 – 100	5
80 – 89	4
70 – 79	3
60 – 69	2
50 – 59	1
0 – 49	0

B. Reasons for the heavy emphasis on class work

The important reasons

- They facilitate learning by making you study each topic during the term
- They enhance deeper learning through analysis and application

Motivational reasons

- Students who invest in exercise work do better in the exam
- Based on previous years' results, points toward total grade generally come easier from the exercises than from the exam.

C. Requirements in future course sequences

The content and organization of this course are constantly evolving. The requirements and grading may change for future course cycles. The terms of the current sequence apply only to the exams connected to it (see section 10.A.).

10. Exam (50 pts)

A. Time

There are two possibilities to take the exam: first one shortly after the course and the second one later. Check exam dates and times through official channels.

B. Coverage

The exam will cover materials discussed in lectures, exercises, and the textbook sections presented at the end of this document.

C. Credit from exercise sets and investment game

Credit from the spring 2019 class work is valid only for the two exams referred to in section 10.A. above. It will not be valid for any other future exams.

D. Formulas

It is useful to memorize the most basic formulas, and develop some memory rules for deriving some additional results. If a question is related to a complicated formula, with little value added in memorizing the formula, it will be provided for you.

E. Equipment use

You are allowed to use only writing tools (pencil etc.) and a regular scientific calculator when taking the exam. You must bring your own calculator. Graphical calculators, or other devices with similar storage capacity, are not allowed.

Specifically, you are not allowed to use any printed (or other content) material, e.g. statistical formulae –booklets or dictionaries.

11. Groups for Class Work

An important part of learning in this class occurs through doing exercises in groups. Group work in exercises and investment game should lead to better learning, i.e. students should learn from one another, and be able to tackle problems at a slower pace than e.g. at the exercise sessions or lectures when issues are covered.

A. Group size

A group must have **one to three members**. The recommended size is **three members**.

B. Group composition

You should form the groups before the deadline for registration for the investment game. Once you have found the group members, you should enroll your group in MyCourses to inform us about the group members. The groups should be the same for

exercise sets and the investment game as we use automatic grading of assignments in MyCourses.

C. Co-operation between groups

Co-operation between groups is strictly forbidden. Questions and course topics can naturally be discussed freely by students, but any signs of inter group co-operation in solving the exercise sets and creating investment game reports will be dealt according to the principles of scholastic dishonesty, see section 17 of this syllabus.

12. Exercises

Introduction session

The exercise practicalities will be covered in the Introduction session.

A. Basic facts

Lectures are supplemented by voluntary exercise sessions which will offer directions on how to approach questions similar to the problem sets and investment game. We will also cover selected solutions to actual questions after problem sets' deadlines.

B. Types of problem sets

There are altogether five graded problem sets in this course: four exercise sets and an empirical exercise. You can get up to 25 points from exercises in total. We will drop your worst score from exercise sets, only the three best of your scores will count toward your grade.

All exercises are returned through MyCourses. See the course website for exercise calendar and deadlines. The problem sets are available on the course website at least 5 days prior to deadline. Group work in groups up to three students is allowed (see 11. Groups for Class Work)

Exercise sets 1-4 (3 x 6 pts)

Numerical calculations and multiple-choice questions – returned using a quiz on the class website. The quiz can be attempted multiple times and by multiple group members. Only the last attempt before the deadline from your group will be graded. Follow the instructions on the website carefully, the assignments are automatically graded. We will not do any manual corrections to the automatic grading. Please do not ask for it. We

drop the lowest of your scores because typos happen and we all have bad days.

Empirical exercise (7 pts)

This exercise set brings together different topics taught during the course and gives you practice in working with actual stock market data. The problems consist of short answer and mathematical questions and the answers are submitted in .pdf or .doc file through MyCourses.

C. Solutions

The correct short answers are posted in MyCourses and selected detailed solutions are explained during the exercise sessions.

D. Problems with questions

The dilemma of writing problem sets

The problem set questions are crafted carefully, but the risk of ambiguity cannot be completely avoided. Even the best questions often seem unclear to at least someone. To achieve theoretically zero ambiguity one would need to resort to a legal style of presentation where everything is defined. However, this would make the questions very tedious to read which would in practice increase the chances of misunderstanding.

Countermeasures

As a remedy for the stress caused by different interpretations, we: 1) give more points on average than what strict grading would produce and 2) accept alternative solutions when appropriate.

The student's part

If you think a question is unclear send an email to Wenjia, well before the deadline. A clarification is provided on the class website if deemed necessary. We cannot comment the questions by other means. Attending the exercise session will give you a chance to argue for an alternative solution to a problem. Complaining about points after the fact is considered unsportsmanlike conduct.

13. Investment Game

Your group will manage the assets of an imaginary stock fund (mutual or hedge fund) operating on the US stock market. This trading simulation is executed using the Virtual Stock Market Trading Game by Stockfuse (instructions for setting the trading account will be posted on the course

website). The Investment Game practicalities and reporting will be covered in the Introduction session.

A. Investment Strategy (3 pts)

The deadline for the Investment Strategy is Wednesday 16.1. at 16:00. The assignment is returned through a form in MyCourses and consists of multiple choice/short answer questions and a short description of your fund and your investment policy (50-100 words).

The idea is to prepare a brief statement of your investment policy for your fund's clients. Don't worry if you don't have anything 'scientific' to say at this point, but try to define the method you will be using to make your decisions to select stocks and trade them. Your clients would probably want to know this before they trust you with their money. Having a clear strategy will also help you when building and adjusting your portfolio.

Keep in mind that you're writing to your clients (or potential clients) now. They want to see also some numerical examples, not just theoretical definitions.

Argue your decisions clearly. When evaluating your strategy we will focus on the clarity, consistency, and overall quality of your investment rationale.

The purpose of the Investment Strategy is to

- Make you look for sources of investment information by yourself
- Get familiar with the current market situation
- Get acquainted with some basics concepts
- Help develop the mindset of an institutional money manager
- Get familiar with the asset management industry's reporting style

Material

As a source of information and ideas we encourage you to acquaint yourself with some descriptive and practical material on the investment environment and stock funds. There are many web pages on investments, for example, try the following sources:

- The quarterly reports and brochures of mutual funds and hedge funds
- Firms' websites, e.g. <https://www.pimco.com>, <https://www.vanguard.com> or <https://www.aqr.com>

- Investor sites such as <http://finance.yahoo.com/> or <http://www.4-traders.com/>
- The Finnish Foundation for Share Promotion (Suomen Pörssisäätiö)

Academic literature is another good source of ideas. You can check e.g. Subrahmanyam, A. (2010), The Cross-Section of Expected Stock Returns: What Have We Learnt from the Past Twenty-Five Years of Research? *European Financial Management* 16(1) for a recent review of academic papers on predictors of stock returns.

You must not copy other people's material and present it as your own. Remember to indicate a reference to the source whenever appropriate. Your value added in using these sources comes from combining data from different sources, summarizing, and analyzing things yourself.

B. Trading (7 pts)

You must construct your initial portfolio before the deadline for investment strategy **Wednesday 16.1. at 16:00**. Please note that acquiring the stocks in the simulated markets may require a lot of time. Hence, you are strongly encouraged to start **building your initial portfolio well before the Wednesday deadline. Your order can later be executed when the market opens on Wednesday 16.1. You must have at least 90% of the money invested in stocks or other traded securities when the game begins, i.e. before the market closes on Wednesday 16.1.** Teams that fail to adhere to this requirement are subject to a penalty.

After the start you are free to hold any amount that you choose in cash and to trade as much or as little as you want.

The purpose of trading in the investment game is to get familiar with the financial markets in a risk-free environment and allow you to apply the analytic tools covered in the course on real stock market data. Some of your trades will be used for class discussion and for weekly assignments.

Evaluation

You can get up to 7 points for trading in the investment game. The evaluation will be solely based on the quality of your investment theses and consistency with the investment strategy. Therefore, remember to always fill the investment rationale when placing an order on Stockfuse.

Depending on your investment strategy you may enter the same investment rationale when placing orders on multiple assets.

Your trades and rationales will be evaluated together after the end of the investment game (**Friday 15.2.**). That way you will have a chance to apply the topics and tools studied during the course and improve your initial positions accordingly.

Your investment performance will not count towards your grade as it is difficult to distinguish whether it has been achieved through luck or skill. However, in previous years, the best performing team has been awarded a special prize from KY Finance.

C. Weekly Assignments (3 x 5 pts)

There are three short assignments related to the investment game designed to give you some guidance on how the topics covered in class can be applied in practice. You may be asked to apply the analytical tools and theoretical concepts on your investment portfolio, your trades or your peers' trades. The assignments are submitted through MyCourses; deadline on **Fridays at 17:00 sharp**.

14. Lecture Style

The lectures mostly add to and complement the material found in the textbook. The purpose is **not** to merely duplicate book content. The intent is to add value by presenting and discussing

- New important scientific research
- Mathematical exposition or derivations on some occasion
- Textbook content, but perhaps presented in a different manner

The lectures are built on the assumption that the audience is already somewhat familiar with the corresponding textbook material. We recommend that you read the material beforehand.

15. Textbook

Course textbook: Bodie, Kane & Marcus, "Investments", Irwin / McGraw – Hill, 10th ed. 2014 (ISBN 978-007-786167-4). You can also use 9th ed. 2011 (978-007-353070-3), 8th ed. 2008 (ISBN 978-007-127828-7), 7th ed. 2007 (ISBN 0-07-126310-1), 6th ed., 2005 (ISBN 0-07-123820-4), or 5th ed., 2002 (ISBN 0-07-112404-7). Selected

parts are assigned for each topic (see 16. Detailed Contents and Readings).

16. Detailed Contents and Readings

The notation BKM *x.y* refers to the **10th edition** of the textbook, chapter *x*, section *y* (*x* by itself means the whole chapter, including appendices). Corresponding readings for the 9th, 8th, 7th, 6th, 5th and 4th edition can be found on the course website (Lectures – Readings).

Parts of the topics here have already been covered in Introduction to Finance (28A00110 or 28A00210). Although assumed known on that level, they are explicitly included also in the readings of this course. This is done 1) to offer a convenient means for a review, 2) to make the topics complete, and 3) because new material is impossible to separate out completely.

1. Introduction

Practical information, objectives and a brief overview of the course contents.

2. Returns, risk, and investment performance

How to measure returns and risks. How to measure the risk-adjusted performance of investments. Long-term performance of major asset classes. BKM 5, 24.1-2 (35 pages).

3. Portfolio Theory

Risk and return for combinations of assets. Risk aversion and utility. Problems with real investors' portfolios. BKM 6 (not Appendix B), 7, 8.1 (43 pages).

4. Portfolio Theory and CAPM

Mean-variance portfolio optimization. Comovements of stocks and the diversification environment. What happens in equilibrium when all investors mean-variance optimize? BKM 8.2-Appendix A, 9.1 and Chapter 9 Appendix A (53 pages).

5. Asset pricing

The market risk premium. Estimating CAPM beta. Multi-factor models. How well does the CAPM explain actual stock returns? BKM 10, 13.1-3 excluding section: "Accounting for Human Capital

and Cyclical Variations in Asset Betas”, p. 397 (40 pages).

6. Market Efficiency - The Hypothesis

The classic definition. Further philosophy on market efficiency. Issues in testing EMH. BKM 12.1-3, 12.4 (only the section "The Issues", p. 384-386), 24.3-4

(21 pages).

7. Market Efficiency - The Evidence

Views on efficiency - old school vs. new school. Asset pricing anomalies and investment strategies. Performance of professionals. Are the markets sometimes wrong? BKM 12.4, 12.6, 24.5-6

(25 pages)

8. Fixed-Income Securities

Valuation with constant interest rates, interest rate risk, duration, the term structure of interest rates. BKM 14.1 (skip Preferred Stock and the rest of 14.1 after that), 14.2-5, 15, 16.1 (62 pages).

9. Factor investing

10. Investor psychology & behavioral finance

Systematic biases in decision-making. Rational vs. real-life investors. Psychology of risky choice. Implications for market efficiency and arbitrage. BKM 12.5, (5 pages).

11. Miscellaneous topics & concluding discussion

Research update - some new important findings in the field of investments. Research done at the Finance Department of Aalto University School of Business. Structuring concise and analytical answers in exams.

17. Scholastic Dishonesty

All class work (exercises and investment game reports) is to be done by the students that return the work, co-operation between groups is strictly prohibited. However, you are allowed to discuss the exercise problems with fellow students on a principal level: the definition of terms and concepts in the questions, and what issues are central to a particular question. Every group should proceed on their own from there.

Failure to adhere to these guidelines is subject to disciplinary action, such as cancellation of class work credit, extra assignments, or removal from the course. Most students would go by these rules anyway, but the sanctions are imposed to achieve a level playing field. Turning in class assignments is considered acknowledgement of these guidelines. Further information may be obtained by contacting the lecturer.

One must adhere to high moral standards in order to successfully practice the finance profession. This business is by definition about OPM (here it means “other people’s money”) - integrity, trustworthiness, and good moral are absolute requirements. Dishonest finance practitioners often end up with bad career records, sometimes they are prosecuted and imprisoned.

18. Disclaimer

This course is about financial investments, but the course content is not intended to serve as direct or indirect investment advice for any purpose. The course organizers are in no circumstances responsible for any adverse outcome, including, but not limited to, incurring losses from financial investments resulting from the direct or indirect application of course content.