FIN*3000 Investments
Winter 2025
0.5 Credits

General Course Information

Instructor:	Ilias Tsiakas
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Office Location	MacKinnon 737 and Remote [Zoom]
Office Hours	By appointment
Department/School	Department of Economics and Finance, Lang School of Business and Economics
Class Schedule:	Tuesday – Thursday 8:30-9:50pm, CRSC 117 **(Section 01)** Tuesday – Thursday 11:30-12:50pm, CRSC 117 **(Section 02)**
Pre-requisites:	ECON*2310, ECON*2560 or FIN*2000
Restrictions:	This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations. See department for more information.

Course Description

This course focuses on financial investments. We will take an in-depth look into the theory, application and real-world evidence of financial investments. First, we will study how stock, bond and currency markets work, and will review issues relating to the valuation of stocks and bonds. Then, we will focus on building optimal portfolios through dynamic asset allocation. We will also examine the risk-return relation in the cross-section of stocks, bonds and currencies. In doing so, we will discuss the performance of popular portfolios based on size, value and momentum. Finally, we will introduce some of the issues relating to financial derivatives.

Our point of view will be that of an investor, which defines the field of finance known as asset pricing. Everything we will do in this course is about understanding and analyzing real-world problems in asset pricing. Hence this course will have practical value to you whether you end up being a sophisticated professional investor or not.

Here is a sample of the questions we will address in this course:

- *How do financial markets work?*
- *How did some of the financial asset classes perform in our recent history?*

- *What determines the price of financial assets?*
- *How can we build optimal portfolios and diversify risk?*
- *How do we measure risk and return? How is risk related to return? Are there ways to maximize our return, minimize our risk or both?*
- *Is the stock market predictable?*
- *Should we invest at home or abroad?*
- *What are derivatives and how do we value them?*

We will address these questions by designing lectures that focus on three aspects: building rigorous theory that provides our conceptual foundation; solving numerical problems so we can understand the calculations involved; and looking at the empirical evidence to see whether our theories actually work in the real world.

Finance is a quantitative subject. Therefore, to study finance we need to use some (mostly basic) mathematics and statistics. However, we will attempt to keep the level of mathematical complexity to a minimum and explain new concepts from first principles. Finance is not a "spectator sport" and students are expected to develop the set of quantitative skills that will allow them to solve finance problems. The best way to absorb the ideas explained in the lectures is by "learning-by-doing". Therefore, for every topic I will distribute a problem set. Students are expected to work out the problems on their own before we discuss them in class so that everyone can participate in the class discussion. Students are also encouraged to solve more problems on their own from the textbook.

Course Learning Outcomes

Upon successfully completing this course, you will:

Knowledge and Understanding:

1) Understand in depth how different financial markets function.
2) Critically analyze the main decisions faced by investors.
3) Implement advanced mathematical and statistical techniques to value stocks, options and other assets, analyze risk and return and build optimal portfolios.

Discipline/Professional and Transferable Skills:

4) Solve numerical problems regarding the valuation of stocks, options and other assets.
5) Assess the risk and return of financial investments.

6) Design optimal investment portfolios.

7) Perform calculations using Excel.

Attitudes and Values

8) Describe and solve financial problems for investors in a real-world context by critically analyzing theories of asset pricing.

Summary of Course Content and Materials

LECTURE TIMETABLE

INTRODUCTION

- Course Outline

TOPIC 1: INTRODUCTION TO FINANCIAL MARKETS

- Prices, Dividends and Returns:
  - Define prices, dividends and returns in discrete and continuous time
  - The Campbell and Shiller decomposition
  - The dividend disconnect
  - Empirical properties of the returns of various asset classes
- Investor Preferences and Risk Aversion
- Problem set 1

TOPIC 2: ASSET ALLOCATION

- The foundations of portfolio choice and diversification
- Mean-variance analysis: assumptions, strengths and weaknesses
  - Maximum Utility Strategy
  - Maximum Expected Return Strategy
  - Minimum Volatility Strategy
  - Global Minimum Variance Strategy
  - The 1/N strategy
- Performance measures, transaction costs and liquidity
- Problem set 2

TOPIC 3: ASSET PRICING MODELS

- Asset Pricing Models
  - The Capital Asset Pricing Model (CAPM): assumptions, derivation and implementation
  - Empirical testing of the CAPM: introduction to Fama-MacBeth regressions
  - Extensions of the CAPM: introduction to Fama-French factor models
  - Cross-sectional predictability: size, value and momentum strategies
  - International diversification, home bias and foreign risks

- Problem set 3

TOPIC 4: DERIVATIVES

- Forward and future contracts

- Call and put options

- Derivative payoffs and valuation

- Problem set 4

FINAL REVIEW

Final exam review and additional problems

Course Assessment

			Associated Learning Outcomes	**Due Date/ location**
Assessment 1:	20%	Midterm Test 1	LO 1 – 6, 8	*Feb 13, 2025*
Assessment 2:	20%	Midterm Test 2	LO 1 – 6, 8	*Mar 27, 2025*
Assessment 3:	20%	Assignment	LO 6 – 7	*Mar 21, 2025*
Assessment 4:	40%	Final exam	LO 1 – 6, 8	*See exam schedule*
Total	**100%**			

Midterm Tests
The midterm tests will take place during class time and will last 80 minutes. The first midterm test will cover Topics 1 and 2 and the second midterm test will cover Topics 3 and 4. Details will be provided later.

Final Exam
The final exam will last 2 hours. It will cover all material taught in this course. Details will be provided later.

Assignment
The assignment will be done in groups. The groups will have a maximum of 5 students. Students are responsible for forming their own groups. More details will follow later.

The assignment will be an empirical project. I expect that the project will involve some of the following:

- Collecting data for different types of assets (e.g., stocks, bonds, commodities or currencies) for a long sample period.
- Using Excel to compute and report summary statistics on the data: mean, variance, standard deviation, minimum, maximum, skewness, kurtosis, serial correlation, cross-correlation, etc.
- Use these statistics to assess the risk-return tradeoff on the assets.
- Design a trading strategy for allocating wealth across these assets.
- Report and discuss the performance of the strategy.

We will review some examples in class on how to use Excel for the project.

Teaching and Learning Practices

Lectures

Lectures will be conducted in person.

In this course, students are strongly encouraged to participate in any way they can. The more interaction, the better the learning experience.

Course Resources

Required Text: None

Recommended Text:
"Investments" by Bodie, Kane, Marcus, Switzer, Stapleton, Boyko, Panasian. 10th Canadian Ed. McGraw Hill 2022. *Cost $159.95.*

If you use a different edition of the textbook, you will be responsible for reconciling the differences.

Other Resources:
Detailed lecture handouts and problem sets will be posted in advance on courselink.

The problem sets will not be graded. For every topic, once we complete our discussion of the lecture handouts, we will solve the questions from the assigned problem set. You are strongly advised to solve

the questions of the problems sets on your own in advance so you can benefit from our discussion. Note that the problem sets will be taken by the instructor. We will not have separate tutorials run by TAs.

Course Policies

Grading Policies

Unless you have discussed an extension well ahead of the due date with the instructor, late penalties of 5% of the total grade earned per day (including weekends) will be assigned to any assessment (i.e. deducted from the total mark). Extensions will only be granted on the basis of valid medical or personal reasons, and need to be requested via email to the instructor as soon as possible. Late assignments will not be accepted once graded assignments have been returned officially to the class at large, unless circumstances permit and alternative arrangements have been made.

Students who find themselves unable to meet course requirements by the deadlines or the criteria expected because of medical or personal reasons, should review the regulations on academic consideration in the Academic Calendar and discuss their situation with the instructor, program counselor or other academic counselor as appropriate.

http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds.shtml

Missed Assignments

A grade of zero will be assigned if you fail to submit an assignment, unless you are ill or have other compassionate reasons. Please read your Undergraduate Calendar for the regulations regarding illness and compassionate grounds. Please note, vacation travel, moving house, or outside work commitments will not be accepted as valid reasons for missing deadlines.

If you have religious observances which conflict with the course schedule or if you are registered with Student Accessibility Services, please contact the course instructor in order to make arrangements for your assessment if appropriate.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for Academic Consideration: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or see the website: https://wellness.uoguelph.ca/accessibility/

Course Evaluation Information

Please refer to the Blue by Explorance system.

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Drop date

The last date to drop one-semester courses, without academic penalty, is **Friday, April 4, 2025.** For regulations and procedures for Dropping Courses, see the Academic Calendar:

https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml