

FIN-405

**Investments**

Collin Dufresne Pierre

Cursus	Sem.	Type
Finance		Opt.
Financial engineering minor	E	Opt.
Financial engineering	MA2, MA4	Obl.

Language of teaching	English
Credits	6
Session	Summer
Semester	Spring
Exam	During the semester
Workload	180h
Weeks	14
<b>Hours</b>	<b>5 weekly</b>
Lecture	3 weekly
Exercises	2 weekly
<b>Number of positions</b>	

**Summary**

The course covers a wide range of topics in investment analysis

**Content**

Topics include portfolio selection, equilibrium asset pricing, arbitrage pricing, market efficiency, behavioral finance, tests of asset pricing models, trading strategies in equity, fixed income, foreign exchange, and commodity markets, as well as dynamic asset allocation.

The course is rigorous, and students are expected to be able to understand and apply quantitative methods. Examples will illustrate real-world applications of the theory.

**Keywords**

Investments, portfolio choice, asset pricing.

**Learning Prerequisites****Required courses**

- Introduction to finance

**Recommended courses**

- Econometrics

**Learning Outcomes**

By the end of the course, the student must be able to:

- Derive the mean-variance efficient frontier, analyze diversification benefits, and explain the concept of risk parity
- Explain the Capital Asset Pricing Model (CAPM) and describe extensions of the framework
- Implement models with macro factors and portfolio factors including the Fama and French model; compare and contrast the Arbitrage Pricing Theory (APT) with the CAPM
- Assess / Evaluate the empirical performance of asset pricing models with particular emphasis on size and value anomalies, the risk anomaly, and liquidity

- Characterize empirical evidence for limits to arbitrage; explain biases in investors' decision making
- Design dynamic asset allocation strategies in the presence of transaction costs
- Explain sources of bid-ask spread and market illiquidity
- Characterize the expectation hypothesis including the empirical evidence or lack thereof
- Design trading strategies in foreign exchange and commodity markets based on carry and momentum
- Derive

### Transversal skills

- Assess one's own level of skill acquisition, and plan their on-going learning goals.
- Take feedback (critique) and respond in an appropriate manner.

### Teaching methods

Lectures and exercises

### Assessment methods

- 30% combined weight on weekly assignments
- 30% midterm exam
- 40% final exam

### Supervision

Office hours	Yes
Assistants	Yes
Forum	Yes

### Resources

#### Virtual desktop infrastructure (VDI)

No

### Bibliography

The main textbook for the course is:

Zvi Bodie, Alex Kane, and Alan Marcus. Investments. McGraw-Hill.

In addition, a number of journal articles will be used.

### Ressources en bibliothèque

- [Investments / Bodie](#)

### Moodle Link

- <https://go.epfl.ch/FIN-405>

### Prerequisite for

- Advanced derivatives

- Credit risk
- Venture capital