Syllabus [2025Year 1 Term]

Course Information

Course Title	Fundamentals of Investments	Credits	3
Course Code	554970-1	Required/Elective (For Undergraduate Courses)	
Department or Major	Department of Mobile Systems Engineering	Language	English
Methods of Teaching		Lecture Room	화3,4,5,6,7,8(국제505)
Time Allotment	Lecture(3) Experiments(0) Trainging & Practice(0) Performance(0) Designing & Planning(0)	Cyber Lectures	
Course Type	offline		

Lecturer

Lecturer	Name	Seungho Baek	Rank	Invited Professor	Final Academic Degree	박사
	Department & college	PRIMUS International College		Office		
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	Field of Interest					

Course Summary

Course Description	This class aims at developing key concepts in investment theory. The goal of this class is to provide you with a structure for thinking about investment theory and show you how to address investment problems in a systematic manner. Students examine current academic work and its application for portfolio choice. This course emphasizes various concepts and approaches that are taken to real world. In this sense, this course requires students to use market data using Yahoo! Finance, MarketWatch, Federal Reserve database in order to evaluate investments strategies and performance of various portfolios.
Description Related Courses	The course emphasizes fundamental concepts and real-world approaches. Students will use market data from Yahoo! Finance and the FRED database, as well as Excel, to evaluate investment strategies and their performance. Throughout the semester, students will participate in mock trading competitions to understand how stocks are traded in the US stock market.

Course Goals	This class aims at developing key concepts in investment theory. The goal of this class is to provide you with a structure for thinking about investment theory and show you how to a ddress investment problems in a systematic manner. Students examine current academic work and its application for portfolio choice. This course emphasizes various concepts an d approaches that are taken to real world. In this sense, this course requires students to u se market data using Yahoo! Finance, MarketWatch, Federal Reserve database in order to evaluate investments strategies and performance of various portfolios. The major topics treated are: 1. Optimal portfolio selection 2. The relation between risk and return 3. Market efficiency 4. Statistical/quantitative characterizations of asset markets 5. Securities pricings 6. Active and passive portfolio management 7. Asset allocation 8. Characteristics of quantitative allocation models 9. Behavior and performance evaluation of mutual and hedge funds
Projected Result s	From this course, students are expected: 1. To gain understand the mechanism of investments. 2. To undertake a rigorous study of theory and empirical evidence relevant to institutional p ortfolio investment analysis. 3. To learn how to do basic security pricing and to quantify risk using quantitative tools su ch as Excel. 4. To learn basic numerical techniques which are of considerable use in quantitative inves tment/risk analysis and portfolio managements in particular.
Percentage of th e original langua ge classes(%)	

Syllabus

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
1	Investment background; Econo mic Indicators	• Define an investm ents • Distinguish among assets • Explain the econo mic functions of fina ncial market	강의, 팀기반학습(TB L), 문제해결학습(BP L), 이러닝 , 프로젝 트기반학습(PBL), 동 료교수법 ,	Reading & Problem So lving
2	Macroeconomic and Industry A nalysis	• Predict the effect of exchange rates, monetary, fiscal, an d supply-side polici es • Understand the rel ationship between business cycles an d industry • Analyze economic indicators and their effect on investment s	강의, 팀기반학습(TB L), 문제해결학습(BP L), 이러닝 , 프로젝 트기반학습(PBL), 동 료교수법 ,	Reading & Problem So lving
3	Financial Statement Analysis	• Interpret a firms' in come statement, bal	강의, 팀기반학습(TB L), 문제해결학습(BP	Reading & Problem So lving

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
		ance sheet, and cash flow statements • Calculate standard measures of a firm's value, and investment & financing decisions • Use financial ratios to interpret a firms efficiency, profitability, liquidity, and leverage	L), 프로젝트기반학습(PBL), 동료교수법 ,	
4	Financial Markets and Instruments	• Describe the differences among the assets trading in money markets and capital markets • Describe the construction of stock market indexes	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving
5	Derivative Markets-I: Futures/Forwards Markets	• Calculate the profit and loss on investments in futures/forward contracts • Formulate futures market strategies for hedging or speculative purposes • Calculate the futures price appropriate to a given price on the underlying asset	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving
6	Derivative Markets-II: Options Markets	• Calculate the profit to various option positions • Understand various options positions and their payoffs • Formulate options strategies for hedging	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving, Team Project
7	Securities Markets	• Calculate the profit to various option positions • Understand various options positions and their payoffs • Formulate options strategies for hedging	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving, Team Project
8	Midterm Exam			
9	Mutual Funds and Other investment Companies	• Cite advantages and disadvantages o	강의, 팀기반학습(TBL), 문제해결학습(BP	Reading & Problem Solving

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
		f investing with an investment company rather than buying security directly • Contrast open-end mutual funds with closed-end funds, unit investment funds, hedge funds and exchange-traded funds • Define net asset value (NAV) and measure the rate of return on a mutual fund	L), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	
10	Risk and Return	• Calculate various measures of return on multiyear investments • Understand risk premiums on stock investments • Compute to estimate the maximum possible loss on risky investments • Understand risk-return trade-off • Use the Sharpe ratio to evaluate the performance of a portfolio and provide a guide for capital allocation	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving
11	Efficient Diversification	• Understand basic mathematical skills to estimate portfolio return and risk • Understand how covariance and correlation affect the power of diversification • Construct efficient portfolios and use the Sharpe ratio to evaluate portfolios	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving
12	Portfolio Optimization	• Use the historical stock prices and Excel to construction optimal risky portfolios • Use index models to analyze the risk	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
		and return characteristics of securities and portfolios		
13	Capital Asset Pricing and Arbitrage Pricing Theory (Multifactor models)	• Use the implication of capital market theory to estimate security risk premiums • Construct and use the security market line • Specify and use a multifactor security market line	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving
14	Efficient Market Hypothesis (EMH), Investment Behavior and Technical Analysis	• Demonstrate why security price changes should be essentially unpredictable in an efficient market • Provide interpretations of various stock market anomalies • Describe serval behavioral biases • Identify reasons why technical analysis may be profitable • Introduce basic technical analysis models and how to use them	강의, 팀기반학습(TBL), 문제해결학습(BPL), 이러닝 , 프로젝트기반학습(PBL), 동료교수법 ,	Reading & Problem Solving, Team Project
15	Final Exam			

Methods of Grading

sequence	Description	Percentage	Details
1	Mid-tem Exam	25%	
2	Final-exam	25%	
3	Pop Quizzes	0%	
4	Assignments	25%	
5	Reports	20%	
6	Presentations & Discussions	0%	
7	Attendance	5%	
8		0%	
9	Others	0%	
All		100%	

sequence	Description	Percentage	Details
All		100%	

Core of Value

핵심가치	핵심역량	하위역량	역량정의	역량구분	값(%)
혁신 (Discovery)	문제해결 (Deliberation)	분석력 창의력 종합적 사고력	문제상황을 명확하게 이해하고 체계적으로 분석하여 창의적으로 해결할 수 있는 능력		0%
혁신 (Discovery)	전문지식 (Knowledge)	탐구능력 논리적 사고력 전문지식/기술	전공분야 지식과 기술, 그리고 관련된 다양한 정보를 활용하여 논리적으로 사고하고 탐구하는 역량	주역량	0%
헌신 (Dedication)	세계시민 (Universal value)	외국어능력 다문화 수용능력 공감능력	세계 각지의 다양한 언어, 문화, 역사에 대한 이해를 바탕으로 글로벌 이슈에 대응할 수 있는 능력	부역량	0%
헌신 (Dedication)	협력.헌신 (Dedication)	대인관계능력 협업 능력 공동체의식	공통의 목적과 가치를 위해 개방적인 태도와 균형 잡힌 시간으로 서로 돕고 헌신할 수 있는 능력		0%
능동 (self- Determination)	자기주도 (maNagement)	독립성 성찰 능력 자기개발능력	자기 스스로 목표를 세우고 목표를 달성하기 위해 주체적으로 실천할 수 있는 능력		0%
능동 (self- Determination)	의사소통 (Articulation)	표현력 이해력 조정력	언어 또는 다양한 매체를 활용하여 다른 사람들과 효과적으로 상호작용할 수 있는 능력	부역량	0%

Textbook(s) & References

Description	Title	Author	Publisher
Required Textbook	Connect Online Access for Essentials of Investments, 12th edn	Zvi Bodie, Alex Kane, Alan Mar	McGraw Hill

Memo

• This class will be conducted as an in-person lecture in English.
• Lecture notes will be provided in English.
• Midterm and final exams will be in English. Both of them are closed-note and book exam. However, you may bring a cheat sheet to the exam.
• You must bring a calculator to the exam. A BA-II financial calculator (or HP-financial calculator) is recommended but not required.
• No make-up exams will be allowed. Failure to attend both the midterm and final exams will result in failing the course.
• The course schedule and topics are subject to change based on the progress of the course and other factors.