Fundamentals of Marketing

Summer School @ Fudan SOE 2021

Course Title	Fundamentals of Marketing		
Credit	3	**Credit Hours**	54 credit hours (one credit hour is 45 minutes)
Course Objectives	• To explain the basic terminology of marketing. • To develop an understanding of marketing's impact upon an organization's success. • To provide a basic understanding of marketing theory and practices driving marketing strategy in the areas of product, pricing, distribution, and promotion. To encourage you to think about how marketing influences business decisions throughout the organization.		
Course Description	This introductory marketing course is primarily organized around the four elements of marketing mixes: product, price, place (distribution) and promotion. The course also covers marketing research methods, customer behavior, segmentation, targeting, differentiation, positioning, digital marketing and global marketing.		

Course Requirements:

- Demonstrate their knowledge of marketing and skills of analysis through weekly assignments and exams
- Show their preparation for class discussions through in-class discussions and activities
- Increase their interpersonal experience by working in teams to prepare the final project
- Develop their skills to make effective, business-quality presentations based on their analyses of projects

Prerequisites:

Prerequisites: ECON 110 or 111 with a grade of "C" or better.

Teaching Methods:

Zoom Online Live Lectures and Student Project Presentation

Course Schedule

Chapter 1 Marketing: Creating and Capturing Customer Value
Chapter 2 Company and Marketing Strategy: Partnering to build customer relationships
Chapter 3 Analyzing the marketing environment
Chapter 6 Customer-Driven marketing strategy: creating value for target customers

Module 2: 4 Ps

Chapter 7-Products, services, and brands: building customer value
Chapter 8-New-product development and life-cycle strategies

Chapter 9-Pricing: understanding and capturing customer value
Chapter 10 -Marketing channels: delivering customer value;

Module 3: 4 Ps (Continue…)
Chapter 11-Retailing and wholesaling
Chapter 12-Communicating customer value: advertising and public relations
Chapter 13-Communicating customer value: personal selling and sales promotion
Chapter 14-Direct and online marketing: building direct customer relationships

Module 4: Marketing Research, Consumer Behavior and Global Marketing
Chapter 4-Managing marketing information to gain customer insights
Chapter 5 Understanding consumer and business buyer behavior
Chapter 15-The global marketplace

The design of class discussion or exercise, practice, experience and so on:
A group project will be completed in this semester. This project is intended to improve your understanding of 4Ps. This component has a total of 210 points. Groups should be formed on the first day of the class.

Grading & Evaluation:

	Points	Percentage
Final Paper	330	55%
Group Project	210	35%
Attendance	60	10%

Teaching Materials & References:
Marketing---An Introduction, 12th or 13th edition, Prentice Hall by Gary Armstrong &Philip Kotler

Industrial Organization

Summer School @ Fudan SOE 2021

Course Title	Industrial Organization		
Credit	3	**Credit Hours**	54 credit hours (one credit hour is 45 minutes)
Course Objectives	Industrial organization is about the study of firms in markets. Industrial organization focuses on firm behavior in imperfectly competitive markets, which appear to be far more common than the perfectly competitive markets that were the focus of your basic microeconomics course. This field analyzes the acquisition and use of market power by firms, strategic interactions among firms, and the role of government competition policy.		
Course Description	The course will address topics and questions such as: • What are the Industries and Markets? What are the unilateral exercises of market power? • How can firms use nonlinear pricing schemes to increase profits? • How do contractual relations between firms affect prices, profits, and welfare? • How does the non-price competition between firms affect prices, profits, and welfare? • When and how should government intervene in markets and implement the industrial policy?		

Course Requirements:

The students are expected to learn from the abstract theorem to the empirical analysis and case study, build up the connection between the economic theory and real-life observations and master independent research skills to explain economic phenomena in the real-life setting.

Prerequisites:

Intermediate Microeconomics

Teaching Methods:

We will approach these subjects from both theoretical and applied perspectives: Theory, Empirical Application and Case Study.

Course Schedule

Class #	Time	Date	Topic	Reading	Assignments
1			Part I: Industrial Organization: Overview	PRN 1	

2	Part I: Industry and Market	Handout	
3	Part II: Price discrimination I	PRN 5	
4	Part II: Price discrimination II	PRN 6	
5	Part III: Static Games & Cournot Competition	PRN 9	
6	Part III: Bertrand Competition	PRN 10	
7	Part III: Dynamic Games	PRN 11	PS1 due
8	Part IV: Horizontal Merger	PRN 15	
9	Part IV: Vertical and Conglomerate Merger	PRN 16	
10	Part V: Research and Development	PRN 20	
11	Case Study Presentation		PS2 due
12	Case Study Presentation		
13	Final Exam		

The design of class discussion or exercise, practice, experience and so on:

The course will combine the basic theoretical analysis with several case studies. For example,

Part II: Price discrimination

Case Study1: Is the price in my shopping app the same as others'? First degree price discrimination

Case Study2: Is student discount a real discount? Third degree price discrimination

Part IV:

Case Study1: Why can Didi and Uber merge in China? Horizontal Merger

Case Study2: Why does Alibaba take over OFO? Conglomerate Merger

Grading & Evaluation:

Grades: 100points

Final Exam (Open Book, 24 hours): 40%

Case Study and Group Presentation: 60%

*Case Study: Provide the background for the case you are interested in, Identify the basic IO concepts, Use the basic model or rationale learned in this class to analyze this specific case you have chosen. 20-30mins group presentation.

Teaching Materials & References:

Textbook:

Pepall, Lynne, Dan Richards and George Norman (PRN). "Industrial Organization: Contemporary Theory and Empirical Applications." Willy, April 2014

Porter, Michael E. "On Competition." Harvard Business School Press, October, 1998

Additional Reference:

Shy, Oz. "Industrial Organization: Theory and Application." MIT, 1996

International Finance

Summer School @ Fudan SOE 2021

Course Title	International Finance		
Credit	3	**Credit Hours**	54+3 tutorial hours (one credit hour is 45 minutes)
Course Objectives	This course is about international macroeconomics and international finance. It will help students understand the macroeconomic and financial linkages between countries.		
Course Description	Topics include national income accounting, the balance of payments, the operation of the exchange rate systems, the international capital market, the international monetary system, and the mechanisms of adjustment of exchange rate, interest rate, current account balance, output and price level in response to monetary and fiscal policies. Some issues regarding the Chinese economy, such as the current account imbalance and capital flow, and RMB exchange rate will also be discussed.		

Course Requirements:
Prerequisites:
Intermediate Microeconomics; Intermediate Macroeconomics

Teaching Methods:
Lecture (online live)

Course Schedule

Session	Chapter	Hour	Contents and key points	Text/ reference	Homework and questions
Session 1	Introduction and The Balance of Payments	3	Topics to cover; The relevance of international monetary economics in reality; The course arrangement;	KOM Chapter 13 FT Chapter 1	
Session 2	The Balance of Payments II	3	The national income accounts; The balance of payments accounts identity;	KOM, Chapter 13 FT Chapter 6 SGUW Chapter 1	Homework 1
Session 3	Exchange rate I	3	The foreign exchange market;	FT Chapter 2	
Session 4	Exchange rate II	3	Equilibrium in the foreign exchange market; UCIP;	KOM Chapter 14 FT Chapter 4	

Session 5	Exchange rate III	3	Given UIP condition, we highlight the consequence of monetary policy shock on exchange rate dynamics	KOM Chapter 15	Homework 2
Session 6	Exchange rate IV	3	Exchange rate in the long run: PPP theory. Introduction of real exchange rate and relative prices.	KOM Chapter 16 FT Chapter 3	
Session 7	Output and the Exchange Rate in the Short Run	6	We use the AA-DD framework to analyze the long-term effect and short-term effect of monetary policy and fiscal policy	KOM Chapter 17	Homework 3
Session 8	Fixed exchange rate and foreign exchange	6	Based on AA-DD model, we analyze the trade-off of different exchange rate regime.	KOM Chapter 18 FT chapter 9	Homework 4
Session 9	Fixed exchange rate or flexible exchange rate, and cross country coordination	3	We introduce the IS-LM model, which is slightly different from AA-DD model; A case study of UK in 1992. The cooperative/non cooperative arrangement of monetary policy under fixed exchange rate regime.	FT Chapter 7 FT Chapter 8	
Session 10	International monetary system: an historical view	3	Summarize the historical experience on the international monetary system in the last century	KOM Chapter 19	Homework 5
Session 11	Optimum currency area and Euro	3	The criteria to choose the optimum currency area and the euro experience	KOM Chapter 21 FT Chapter 10	
Session 12	Financial globalization and the crisis	3	We try to understand what has caused the rapid growth in international financial activity?	KOM Chapter 20 FT Chapter 1	
Session 13	Exchange rate revisit	3	We highlight the empirical findings of long-run exchange rate dynamics and the short-run exchange rate dynamics And we cover the Balassa-Samuelson model	FT Chapter 11	Homework 6
Session 14	Sovereign debt and default	3	We introduce the sovereign debt and how is the debt related with macroeconomics fundamental	KOM Chapter 22 FT Chapter 11 SGUW	

				Chapter 15	
Session 15	Current account and exchange rate in China	3	A special focus on China: A summary of monetary policy and exchange rate policy in the past 30 years.	Additional materials	
Session 16	Final Exam	3			

The design of class discussion or exercise, practice, experience and so on:

Exercise, discussion.

Grading & Evaluation:

Class Performance 10%

Homework: 30%

Final: 60% (take-home exam)

Teaching Materials & References:

NO.	Authors	Title	Publisher	Year
1	Paul R.Krugman Maurice Obstfeld Marc Melitz (abbreviated as KOM)	*Krugman, Obstfeld and Melitz, International Economics: Theory and Policy* (Ninth Edition) (The International Finance part)	清华大学出版社	2016
2	Robert Feenstra Alan Taylor (abbreviated as FT)	International Macroeconomics (Third Edition)	中国人民大学出版社	2017
3	Stephanie Schmitt-Grohe, Martin Uribe and Michael Woodford (abbreviated as SGUW)	International Macroeconomics	In preparation for Princeton University Press.	2019
4	Maurice Obstfeld and Kenneth Rogoff (abbreviated as FT)	*Foundations of International Macroeconomics*	中国金融出版社	2010
5	Bruce Greenwald and Joseph E. Stiglitz	*Towards a New Paradigm of Monetary Economics*	Cambridge University Press	2003

International Trade

Summer School @ Fudan SOE 2021

Course Title	International Trade		
Credit	3	**Credit Hours**	54 credit hours
Course Objectives	The aim of this course is to give students the conceptual basis and the necessary tools for understanding modern international trade at the intermediate level. ● Grasp basic theories in international trade, for example, the Ricardian Model, Two-factor model (H-O Model), the Standard Model, etc., ● Understand present trade conditions in the world, especially from the viewpoint of China, for example, the trade unbalance between the U.S. and China, various trade protectionism (green trade barriers), outsourcing and processing trade, etc.; ● Comprehend the reasons and impacts of trade policies, for example, the impact of WTO, regionalization in Asia-Pacific region, tax rebate and subsidy in exports, etc.		
Course Description	Topics discussed in this course are: gains from trade in a classical world; the modern theory of international trade; factor price equalization; empirical tests and extensions of the pure theory model; economic growth and international trade; the nature and effects of protection; motives and welfare effects of factor movements. Each topic will be followed with evidences, examples and case studies mainly under the context of China's international trade with the U.S. and the rest of the world.		
Course Requirements: Prerequisites: Intermediate Microeconomics, Principles of Macroeconomics, Business Finance			
Teaching Methods: Lecture			
Course Schedule Lecture 1: World Trade：An Overview, Chap 2. The formation of WTO, China's trade performance prior to and post WTO, trade imbalance between China and the U.S. Lecture 2: Labor Productivity and Comparative Advantage: The Ricardian Model, Chap 3. Lecture 3: Resources, Comparative Advantage, and Income Distribution, Chap 4, Part 1.			

Lecture 4: Resources, Comparative Advantage, and Income Distribution, Chap 4, Part 2.

Lecture 5: Midterm Exam 1 & The Standard Trade Model, Chap 5, Part I.

Lecture 6: The Standard Trade Model, Chap 5, Part II.

Lecture 7: International Factor Movements, Chap 7, Part I.

Lecture 8: International Factor Movements, Chap 7, Part II.

Lecture 9: The Instruments of Trade Policy, Chap 8, Part I.

Lecture 10: Midterm Exam 2 & The Instruments of Trade Policy, Chap 8, Part II.

Lecture 11: The Political Economy of Trade Policy, Chap 9, Part I.

Lecture 12: The Political Economy of Trade Policy, Chap 9, Part II.

Lecture 13: Trade Policy in Developing Countries, Chap 10.

Lecture 14: Controversies in Trade Policy, Chap 11.

Lecture 15：Final Examination

The design of class discussion or exercise, practice, experience and so on:

Lectures, group discussions, and PowerPoint presentations

Grading & Evaluation:

Midterm 1 (25%), Midterm 2(25%), Participation (10%), Final Exam (40%)

Teaching Materials & References:

Paul R. Krugman, Maurice Obstfeld, International Economics: Theory and Policy (8th Edition), Prentice Hall, 2008.

Prerequisites:

Intermediate Microeconomics, Principles of Macroeconomics, Business Finance

Social Media and Social Networking

Summer School @ Fudan SOE 2021

Course Title	Social Media and Social Networking		
Credit	2	**Credit Hours**	36+3 (one credit hour is 45 minutes)
Course Objectives	After taking this class, students will • gain and advance their knowledge in this area for a better understanding of the role that social media and social networking currently play in our daily life in both societies; • obtain and improve their independent- and critical-thinking ability; • be able to review and criticize the influence and implications of social media and social networking from a cross-national, cross-cultural, and a comparative perspective; and • get prepared as would-be pursuers of further knowledge in relevant courses at higher levels as well as of a career in the most viable field of media and communication now and in the future.		
Course Description	This issue-driven, student-centered course discusses both the theories and practices regarding social networking and converged/integrated communication via social media today. This course also examines interrelationships among media, communication, politics, economy, technology, business, social institutions, and individuals, as well as a variety of issues concerning the role and influence of social media and social networking in the society as a whole. This course is designed for both undergraduate and graduate students from various disciplines or programs of study.		
Course Requirements: No			
Teaching Methods: This course is devoted to creating a student-centered learning environment, by adopting a balanced approach to covering both the breadth and depth of the subjects. Course activities mainly include lectures, reading assignments, student-led discussions, substantial discussions in an all-class or small group setting based on assigned readings, social media activity, term paper, final presentations, and guest speakers (if available). Book chapters, journal articles, news stories or industry information, and up-to-date research findings will be assigned for reading.			
Course Schedule			

Weeks	Topics/Class meeting/activities/readings
1	**Introduction, history, basics, conceptions and concerns**
	- Self-introduction - Introduction to the course: syllabus, schedule, assignments, expectations - Reading/Course reserve - Grouping - Discussion assignments - Guideline for student-led discussion - Social media account sign-up - Overview of social media and social networking - History of social media and cultural of connectivity - Social networking-basics, conceptions and concerns - Class discussion
	Reading (Part I) Book chapters: Jose van Dijck. (2013). *The Culture of Connectivity: A Critical History of Social Media*. Oxford University. (available for online reading through e-Library) - Chapter 1 "Engineering Sociality in a Culture of Connectivity" - Chapter 2 "Disassembling Platforms, Reassembling Sociality"
	Reading (Part II) Book chapters: Zizi Papacharissi (Ed.) (2011). *A Networked Self: Identity, Community, and Culture on Social Network Sites*. Routledge. - "Introduction" Charles Kadushin. (2012). *Understanding Social Networks: Theories, Concepts and Findings*. Oxford University Press. - Chapter 1 "Introduction" - Chapter 2 "Basic Network Concepts, Part I" - Chapter 3 "Basic Network Concepts, Part II" - Chapter 5 "Psychological foundations" - Chapter 9 "Networks, Influence and Diffusion"
2	**Connected and networked society** **Networked public and networked self**
	- Social networks and How they shape our lives

- The new social operating system
- How networked individualism works
- Identity, community, and culture on social networks
- The selfies
- Social media and privacy

- Class discussion

Reading (Part I)

Book chapters:

Lee Rainie, & Barry Wellman. (2012). *Networked: The New Social Operating System*. Cambridge, MA: MIT Press.

- Part 1 "The Triple Revolution"
- Part 2 "How Networked Individualism works"

Reading (Part II)

Book chapters:

Zizi Papacharissi (Ed.) (2011). *A Networked Self: Identity, Community, and Culture on Social Network Sites*. Routledge.

- Chapter 1 "Interaction of Interpersonal, Peer, and Media Influence Sources Online"
- "Conclusion"

3 Social media and social networking sites

- Facebook, connected friendship and mediated intimacy

- Twitter, Firechat, civic engagement and movement

- Instagram, Pinterest, Snapchat *vs*. Flickr, visual-oriented consumption of information

- YouTube, UGC and integration of broadcasting networks

- Weibo, WeChat, and Tik tok in China

- Class discussion

Reading (Part I)

Book chapters:

Jose van Dijck. (2013). *The Culture of Connectivity: A Critical History of Social Media*. Oxford University.

- Chapter 3 "Facebook and the Imperative of Sharing"

Deborah Chambers. (2013). *Social Media and Personal Relationships: Online Intimacies and Networked Friendship*. Palgrave MacMillan.

- Chapter 1 "Introduction"
- Chapter 2 "Technologically Mediated Personal Relationships"
- Chapter 4 "Self-Presentation Online"
- Chapter 7 "Digital Dating and Romance"
- Chapter 9 "Mediated Intimacies"

Zizi Papacharissi (Ed.) (2011). *A Networked Self: Identity, Community, and Culture on Social Network Sites*. Routledge.

- Chapter 2 "Social Network sites as Networked Publics"
- Chapter 4 "Social Network Sites as Virtual Communities"

Reading (Part II)

Book chapters:

Jose van Dijck. (2013). *The Culture of Connectivity: A Critical History of Social Media*. Oxford University.

- Chapter 3 "Twitter and the Paradox of Following and Trending"

Paolo Gerbaudo. (2012). *Tweets and the Streets: Social Media and Contemporary Activism*. Pluto Press. (available online)

- Chapter 4 "The hashtag which did (not) start a revolution"

John M. Roberts. (2014). *New Media and Public Activism: Neoliberalism, The State and Radical Protest in The Public Sphere*. Policy Press.

- Chapter 8 "Global social movements"

Reading (Part III)

Articles:

Yuheng Hu, Lydia Manikonda, & Subbarao Kambhampati. (2014). *What We Instagram: A First Analysis of Instagram Photo Content and User Types*. Proceeding of ICWSM.

Joseph B. Bayer, et al. (2015). Sharing the small moments: ephemeral social interaction on Snapchat. *Information, Communication & Society*. DOI: 10.1080/1369118X.2015.1084349

Reading (Part IV)

Book chapters:

Jose van Dijck. (2013). *The Culture of Connectivity: A Critical History of Social Media*. Oxford University.

- Chapter 6 "YouTube: The Intimate Connection between Television and Video Sharing"

4	Social Media and News Use, Journalism, and Strategic communications Final presentation
	- Social media usage in U.S. and China - The evolving role of news on Twitter and Facebook - News use across social media platforms - How social media is reshaping news - Social media and journalism - Social Journalism - Sharing ideology and sharing economy - Social media, advertising, PR, marketing and political campaigns - Social influence and diffusion of information - Social network and health communication - Final presentation

Reading (Part I)

Journal articles:

Teresa Correa, Amber Willard Hinsley, & Homero Gil de Zúñiga. (2010). Who interacts on the Web?: The intersection of users' personality and social media use. *Computers in Human Behavior 26,* 247–253.

Reading (Part II)

Book chapters:

Eugenia Siapera & Andreas Veglis. (2012). *The Handbook of Global Online journalism*. Wiley-Blackwell.

- Chapter 14 "Crowdsourcing Investigative Journalism"
- Chapter 17 "Social Journalism"

Reading (Part III)

Articles:

Uber, Airbnb and consequences of the sharing economy: Research roundup.
http://journalistsresource.org/studies/economics/business/airbnb-lyft-uber-bike-share-sharing-economy-research-roundup

Book chapters:

Karine Nahon, & Jeff Hemsley. (2013). *Going Viral*. Polity. (choose four chapters)

Reading (Part IV)

Journal articles:

Gang (Kevin) Han, & Wen Wang. (2015). Mapping user relationships for health information diffusion on microblogging in China: A social network analysis of Sina Weibo. *Asian Journal of Communication, 25* (1), 65-83, DOI: 10.1080/01292986.2014.989239

Robert M. Bond, et al. (2012). A 61-million-person experiment in social influence and political mobilization. *Nature*. doi:10.1038/nature11421.

The design of class discussion or exercise, practice, experience and so on:

practice

Grading & Evaluation:

Assignment/coursework guidelines and handouts will be provided when needed.

1) Class discussion and case study: 20%;
2) Student-led discussion: 30%;
3) Social media activity: 10%;
4) Term paper/group project: 25%;
5) Final presentation: 10%;
6) Peer evaluation 5%

There will be no make-up exam.

Teaching Materials & References:

No required textbooks. All readings are reserved in the library, photocopied or available online. Additional readings will be provided as the semester progresses (The tentative reading list is included in the class schedule).

Econometrics

Summer School @ Fudan SOE 2021

Course Title	Econometrics		
Credit	3	**Credit Hours**	54+3 tutorial hours (one credit hour is 45 minutes)
Course Objectives	This course aims to provide students with a basic understanding of econometrics and its applications to both cross-sectional and panel data. After the course, students should be able to carry out simple regression analyses, including estimation and inference.		
Course Description	This course aims to provide students with a basic understanding of econometrics and its applications to both cross-sectional and panel data. After the course, students should be able to carry out simple regression analyses, including estimation and inference.		

Course Requirements:

Prerequisite courses:

- Calculus I, Linear Algebra, Probability Theory, Statistics

Teaching Methods: Lectures (online live)

Course Schedule

1. Introduction
   a) What is Econometrics; History and key figures; Basic methods
   b) Stock and Watson Ch 1
2. Probability Theory and Statistics
   a) Random variables; Population and sample; Distributions; Moments.
   b) Stock and Watson Ch 2,3
3. Simple Regression Model
   a) Linear regression models with one regressor; Ordinary Least Square (OLS) estimator; Assumptions of OLS; Measure of fit.
   b) Stock and Watson Ch 4
4. Inference
   a) One-sided and Two-sided Hypotheses; Confidence interval; Binary explanatory variables; Gauss-Markov assumptions; t-test.
   b) Stock and Watson Ch 5
5. Regression Model with Many Regressors
   a) Omitted variable bias; Multiple regressors; OLS for multiple regression models; Multicollinearity; Joint hypothesis testing.
   b) Stock and Watson Ch 6,7
6. Specifications
   a) Nonlinear model; Polynomial and logarithm; Interaction between regressors; Class size and test score (example).
   b) Stock and Watson Ch 8
7. Endogeneity
   a) Causes of endogeneity; Endogeneity bias; Instrumental variables (IV); Two stage least

square (2SLS) method.

b) Stock and Watson Ch 9,12

c) Boosting

8. Panel Data

a) Panel structure; Time series dimension; Fixed effect model; Estimation.

b) Stock and Watson Ch 10

9. Binary Choice Models

a) Binary dependent variables; Linear probability model; Logit and Probit models; Maximum Likelihood Estimation (MLE).

Stock and Watson Ch 11

The design of class discussion or exercise, practice, experience and so on:

There are four problem sets containing both theoretical exercises and practical problems to be solved using statistical software. These problem sets are designed to help the students understand the materials of the course more thoroughly.

Grading & Evaluation:

The course grade will be based on the performance on the problem sets to be given throughout the semester (40%), and a course project (60%).

Late submission is NOT accepted. Academic integrity is expected. Failure to comply will result to immediate failure of the course and may be subject to further investigations/penalties by the university regulations.

Teaching Materials & References:

1. J. Stock, M. Watson, Introduction to Econometrics, Pearson, 2019

2. J. Wooldridge, Introductory Econometrics: A Modern Approach, Cengage Learning, 2019

3. J. Wooldridge, Econometric Analysis of Cross Section and Panel Data, Massachusetts Institute of Technology, 2010

Foundation of Data Science

Summer School @ Fudan SOE 2021

Course Title	Foundation of Data Science		
Credit	2	**Credit Hours**	36+3 tutorial hours (one credit hour is 45 minutes)
Course Objectives	The class, Foundations of Data Science, is designed to be a freshman level data science class that focuses on the fundamentals of data science with some primary introductions of basic machine learning algorithms near the end of the class. Instead of focusing on the theory of machine learning and data analysis, we will get started with data analysis directly. The course content is primarily based on the undergraduate course, The Foundations of Data Science, from UC-Berkeley and UC-San Diego.		
Course Description	This class will teach you how to explore data in a scientific way and show you the importance of data analysis. It will also teach you skills for programming data analysis code in Python. The topics included in the schedule adopts a breadth-first approach to give you a big picture of data science. Specifically, at the end of this course you will be able to: • Understand the basics of Python programming • Understand important statistics concepts such as sampling, hypothesis testing, and confidence intervals. • Understand experimental design to gather data • Basic data visualization techniques • Use appropriate classification and inference tools to analyze data.		

Course Requirements:

The pre-requisite of this class is basic high school algebra and an inquisitive mind. There is no requirement on prior programming experience. Each student is expected to have a computer. Either Windows or Mac is fine.

Teaching Methods: Lectures (live and recorded lectures)

Course Schedule

1	Session 1	Introduction / cause & effect	Chapters 1 - 2	Lab1: Expressions
	Session 2	Expressions and data types	Chapters 3 - 4	
	Session 3	Lab time		
2	Session 4	Sequences	Chapter 5	Lab2: Types and sequences
	Session 5	Tables	Chapter 6	
	Session 6	Lab time		
3	Session 7	Charts / Histograms	Chapter 7	Lab3: Tables
	Session 8	Functions and apply	Chapter 8 intro, 8.1	

	Session 9	Intro to Tableau			
4	Session 10	Groups / joins	8.2-8.5	lab4: Functions and visualizations	
	Session 11	Iterations, conditionals	9.1-9.2		
	Session 12	Case study with Tableau			
5	Session 13	Simulation and chance	9.3 - 9.5	Lab5: Randomization	
	Session 14	Sampling and empirical distributions	Chapter 10		
	Session 15	Lab time			
6	Session 16	Models	11.1	Lab6: Sampling	
	Session 17	Hypothesis testing	11.2-11.4		
	Session 18	Lab time			
7	Session 19	AB testing, causality	Chapter 12	Lab 7: Hypothesis Testing	
	Session 20	Bootstrapping and confidence interval	Chapter 13		
	Session 21	Lab time			
8	Session 22	CI for hypothesis testing, center and spread	13.4, 14.1-14.2	Lab 8: Resampling and bootstrap	
	Session 23	Normal distribution, CLT	14.3-14.4		
	Session 24	Lab time			
9	Session 25	Sample means, designing experiments	14.5, 14.6	Lab9: regression	
	Session 26	correlation and regression	15.1 - 15.2		
	Session 27	Lab time			
10	Session 28	Least squares, regression inference	15.3, 15.5, Chapter 16	Lab10: Regression inference	
	Session 29	Classification	Chapter 17		
	Session 30	Lab time			
11	Session 31	Decisions	Chapter 18	Lab11: Classifications	
	Session 32	Wrap up	No reading		
	Session 33	Lab time (work with TA)			
12	3 hours and 20 minutes	Final Exam			

The design of class discussion or exercise, practice, experience and so on:
Exercise and practice

Grading & Evaluation:

Your final grade will be determined via the following percentages:
Lecture participation points: 10%
Labs: 60%
Final: 30%

Important grading policies:

- Every student should follow the policy on pair programming.
- According to Fudan University's policy, there is a threshold on the percentage of students who may receive A or A- in a class. Please keep this policy in mind.

There will be no make-up exam.

Teaching Materials & References:

- Textbook for our class will be the freely available awesome textbook, Computational and Inferential Thinking - The Foundations of Data Science", by Ani Adhikari and John DeNero.
- A reference textbook very useful for AI is Artificial Intelligence: A Modern Approach by S. Russell and P. Norvig.
- There will be a reading assignment for most of the days. It is expected that you complete the reading assignment before the start of the lecture.
- You should score at least 55% in the final exam to get a passing grade for this class, regardless of your overall percentage.
- There is an optional final project that will be treated as extra credit.