上海交通大学 安泰经管学院
SHANGHAI JIAO TONG UNIVERSITY ANTAI COLLEGE Economics·Management

SYLLABUS: ECON3513 BANK MANAGEMENT

Time and Location:
- TBA

Contact Points:
- Canvas: oc.sjtu.edu.cn（上海交通大学线上课程平台）
  - Announcement
  - Lecture notes
  - Live broadcast and recorded lecture video
  - Class Assignment
  - Project group up sign up
  - Q&A at Discussion Board

- Zoom online meeting/Tencent Meeting （zoom 视频/腾讯会议直播）
  - Live lectures in each week during the class time（每周上课时间进行直播）
  - Meeting ID and PWD: TBA

- https://www.icourse163.org/ (中国大学慕课平台)
  - (Prerecorded) MOOC videos of each class （课程预录视频，用于复习回看）
  - MOOC Classroom app: Interaction, survey and quizzes during the live broadcast in each week during the class time. (慕课堂 app：直播课时互动答题，问卷，堂上测验等)
  - Alternative: http://sjtu.fanya.chaoxing.com/portal (TBA) （上海交通大学超星网课平台）

Office Hour and Contact:
- The most efficient way to contact me is by email or wechat group (QR code available at Canvas), and I will usually reply in 24 hours.
  - Email: nanli@sjtu.edu.cn
- You can also post your questions in the Discussion Board on Canvas or at icourse163.
- Teaching Assistants: TBA

Course Objectives:
This course builds on basic financial theory and the principles courses in economics. It addresses topics that are important for managing financial institutions in a rapidly changing international environment. Upon successful completion of the course, student should be able to understand the role of financial institutions in the economy; explain why banks are unique, and therefore merit special attention; to understand the analytical foundation underlying financial institutions management, and be able to use them to analyze important financial issues, including financial crisis; be familiar with risk management techniques to deal with the various risks banks and other financial institutions face.

Prerequisites:
- Finance
- Money and Banking
- Students are expected to have some background in basic economic theory (macroeconomics and microeconomics), algebra, differential calculus, statistics, and a disposition to keep themselves informed of current developments in the area of banking and finance.
- Note: Please make sure you have adequate background in analytics, linear algebra, statistics, economics and finance. This is a course in finance, with focus on the risk management and quantitative analysis. This course is NOT suitable for students without any training in economics, statistics, analytics or linear algebra.

Textbooks and References:
Textbook:
- Financial Institutions Management: A Risk Management Approach, Anthony Saunders and Marcia Cornett, 9th edition, McGraw Hill, 2017/02/09，ISBN: 9781259717772

Reference book：

- Peter S. Rose and Sylvia C. Hudgins, *Bank Management and Financial Services*, 9th Edition, International Edition, McGraw-Hill, 2013 (BMFS)
- Peter S. Rose and Sylvia C. Hudgins, *Bank Management and Financial Services*, 9th Edition（英文缩减影印版），中国人民大学出版社
- Peter S. Rose and Sylvia C. Hudgins, *Bank Management and Financial Services* (中文版), 9th Edition, 机械工业出版社, 2016
- John C. Hull, *Risk Management and Financial Institutions*, Second Edition, Pearson, 2010

Weight of Assessment:
- Final Exam   :   40%
- Class Assignments   :   30%
- Presentation and Term Paper :   20%
- Class Participation   :   10%

Warning:
- ***Plagiarism is taken very seriously.*** *Students caught plagiarizing in class assignments, term paper, and/or exams in this course have been severely penalized. Any student caught cheating in the final exam will be failed in this course and reported to the school for further penalty.*

Class Assignment:
There will be 3-4 class assignments. Students are encouraged to discuss on assignments, but each student should **finish the assignment on her or him own** and hand in separate answers.

Term Paper and Class Presentation:
Students are advised to form a working group of **no more than 5 students**. Each group should write a term paper and present it in the class. Each group can choose to write a paper on a case study from the list given in the syllabus or a topic related to bank risk management. However, the topic chosen by each group is subject to the approval of the lecturer.

Note: I expect each group to apply the methods/theory learned in the class to analyze the case or topic of your choice. Simple review of the case or literature review of a topic will result in low score.

The following questions should be addressed in your term paper if a case study is chosen,
   a. What has happened and how did it happen?
   b. To your opinion, what are the specific risks involved? You need to present arguments based on data or facts to support your opinion.
   c. As a bank manager, what lesson in can we learn from this case?

The following questions should be addressed in your term paper if self-selected topic is chosen,
   a. What is the question or problem?
   b. Why this question is important or interesting?
   c. How do you address this question, i.e. empirical analysis or theoretical analysis?

Each group should prepare to present the term paper in **20 minutes** with 3-5 minutes for Q&A. The presentation slides should be submitted before the presentation.

The term paper should be no more than 20 pages with double spaces and fonts no smaller than 10pt. The data source and references should be clearly and completely documented.

Timeline for term paper and presentation (subject to change)
   1. Week 3-5: Form group and decide on term paper topic
   2. Week 7: Bid for the case study and allocation of the topic.
   3. Week 9-16: Presentation of term paper
   4. On the day of Final Exam: Due date for term paper.

A **"Best Presentation" prize** will be awarded to the group who does the best job in presentation. Each group needs to evaluate the performance of other groups and the Best Presentation prize will be awarded to the group with highest average score from group evaluation and lecture evaluation.

Class Participation:
Students are encouraged to actively participate in the class discussion. Such activities include good comments, questions, articles and even pointing out flaws and typos in class material.

A **"Best Question" prize** will be awarded to the student who raises interesting questions and/or makes good comments in the class or on the forum.

List of the Case Study and Research Topics:

- AIG, Allied Irish Bank, Bankers Trust, Barings Bank, China Aviation Oil, Continental Illinois, Daiwa Bank, Lehman Brothers, LTCM, Société Générale,Washington Mutual Fund, Norther Rock, UBS Rogue Trader (2011), Citibank in 2008

- Online Banking, Mobile Payment, Micro Finance, Bitcoin, FinTech, and etc.

Suggested Periodicals:
- Asiamoney www.asiamoney.com
- The Asian Wall Street Journal www.awsj.com
- The Banker www.thebanker.com/
- The Business Times business-times.asia1.com.sg
- The Economist www.economist.com
- Euromoney www.euromoney.com
- The Financial Times www.ft.com
- The Financial Times Chinese www.ftchinese.com
- The Wall Street Journal www.wsj.com

Useful Links:
- Federal Reserve
- Federal Deposit Insurance Corporation
    - FDIC Quarterly Banking Profile
    - FDIC Quarterly Report
- China Banking and Insurance Regulatory Commission（中国银行保险监督管理委员会）
    - Statistics（统计数据)
- China Banking and Insurance Regulatory Commission (English)
    - Statistics
- The People's Bank of China
- The People's Bank of China (English)
- Monetary Authority of Singapore
- China Security Regulatory Commission
- China Security Regulatory Commission(English)

Course Outlines (subject to revision):

Topic 1: Specialness, Risks and Regulations of Financial Institutions

- **Lecture Notes 1**
- *Case Study:*
  - *Savings and Loan Debacles*
  - *Bank Run and Deposit Insurance*
  - *Video*: **Bank Draft of Ri Sheng Chan--Acient FinTech** 《国宝档案》 20121004 古代科技——日升昌汇票
- Diamond, D. W. Financial Intermediation and Delegated Monitoring, *Review of Economic Studies*, vol. 51 (July 1984), pp. 393–414
- Douglas W. Diamond, Philip H. Dybvig, Bank Runs, Deposit Insurance, and Liquidity, *Journal of Political Economy*, Vol. 91, No. 3. (Jun., 1983), pp. 401-419
- FIM Chapter 1, 7, 19
- FIM **Appendix 19C**, Deposit Insurance Coverage for Commercial Banks in Various Countries
- FIM **Appendix 10B**: Black–Scholes Option Pricing Model
- FIM **Appendix 1A**, The Financial Crisis: The Failure of Financial Services Institution Specialness
- https://www.federalreservehistory.org/essays/savings_and_loan_crisis

Optional Readings:

- **Handbook of China's Financial System**, Edited by Marlene Amstad, Guofeng Sun and Wei Xiong
- Hart, Oliver, and Luigi Zingales. 2011. "**A New Capital Regulation for Large Financial Institutions**." *American Law and Economics Review 13 (2)*: 453-490.
- Video: **The Case For and Against Regulation** by Professor Oliver Hart, 2018 Nobel Laureate Shanghai Jiao Tong University Special, March 14, 2018.

Topic 2: Organization, Structure, Changing Dynamics of Banking Industry

- Lecture Notes 2
- *Case Study:*
  - *Mobile Payment*
  - *Shadow Banking in China after 2008*
  - *FinTech and Financial Regulation: Ant IPO Suspension*
  - *Case in Video:* The Crisis of Credit Visualized *by Jonathan Jarvis*
- FIM Chapter 1-2
- FIM **Appendix 2A-2D**: Financial Statement Analysis, Depository Regulators, and Technology in Commercial Banking
- Nan Li, John D. Van Fleet, **Why Beijing was right to rein in Jack Ma's rogue Ant Group IPO**, *Nikkei Asia, Opinion,* 2021/02/28
- Nan Li and John D. Van Fleet, **Ant's road to redemption: How the fintech giant can save itself**, *SupChina,* 2021/05/18
- Nan Li and John D. Van Fleet, **Foreign media fail to understand China's fintech regulators**, *Nikkei Asia, Opinion,* 2021/10/07
- 李楠，**蚂蚁的救赎——金融科技前路何方**?，《复旦金融评论》第 **12** 期，2021/06/25
- Chen, K., Ren, J., and Zha, T. (2018). The Nexus of Monetary Policy and Shadow Banking in China. American Economic Review, 108(12), 3891–3936. https://doi.org/10.1257/aer.20170133
- FDIC Quarterly Banking Profile
- **China Banking Regulatory Commission Annual Report (in Chinese)**
- **China Banking Regulatory Commission Annual Report (in English)**
- **China Banking Industry Financial Institution 国内银行业金融机构**

Topic 3: Liquidity Risk and Monetary Policy

- Lecture Notes 3
- *Case Study:*

- *Digital RMB and Digital Currency*
- FIM Chapter 1, 12, 18-19
- FIM **Appendix 1B,** Monetary Policy Tools
- FIM **Appendix 18A**, Federal Reserve Requirement Accounting
- Nan Li and John D. Van Fleet, **China's digital yuan is a transaction helper, not a Trojan horse**, *Nikkei Asia,* **Opinion,** 2021/05/03.
- 李楠，陈开宇，John D. Van Fleet, 数字人民币是"特洛伊木马"吗？，新华社客户端，中国金融信息中心，2021/05/09
- 范一飞：关于数字人民币 M0 定位的政策含义分析
- China Monetary Policy Report
- Monetary Authority of Singapore Monetary Policy Statement
- 《商业银行流动性风险管理办法》(Commercial Bank Liquidity Risk Management Effective 2018/07/01 Published on 2018/05/23)

Topic 4: Interest Rate Risk
- Lecture Notes 4
- *Case Study: Orange County Case*
- FIM Chapter 8-9, 22-24
- FIM , **Appendix 9A**, The Basics of Bond Valuation
- Excel File: **Duration**
- 《商业银行银行账簿利率风险管理指引（修订）》(Commercial Bank Banking Book Interest Rate Risk Management Guidance Revised Effective on 2019/01/01, Published on 2018/05/30)
- 《商业银行银行账簿利率风险管理指引（修订）》附件 (Commercial Bank Banking Book Interest Rate Risk Management Guidance Revised Appendix Effective on 2019/01/01, Published on 2018/05/30)

Topic 5: VaR and Market Risk
- Lecture Notes 5
- *Case Study: Orange County Case*
- FIM Chapter 13, 15-16, 22-24
- 《商业银行市场风险管理指引》（**Commerical Bank Market Risk Management Guidance passed on 2004/12/16, Announced on 2004/12/29, Effective on 2005/3/1**)
- 《市场风险资本计量内部模型法监管指引》征求意见稿 （Internal Model for Market Risk Management 3rd Draft 2008/12/3）

Topic 6: Credit Risk
- Lecture Notes 6
- *Case Study: Credit Analysis*
- FIM Chapter 10-11, 22-26
- FIM **Appendix 10A**, Credit Analysis

Syllabus-Fundamentals of Materials Science II

课程基本信息（Course Information）					
*课程代码（Course Code）	MSE2606	*学时（Credit Hours）	48	*学分（Credits）	3
*课程名称（Course Name）	（中文）材料科学基础				
	（英文）**Fundamentals of Materials Science II**				
课程性质 (Course Type)	Compulsory Course				
授课对象（Audience）	Undergraduate students majored in materials science & engineering, metallurgical engineering, mechanical engineering and electrical engineering				
授课语言 (Language of Instruction)	English				
*开课院系（School）	Materials Science & Engineering				
先修课程（Prerequisite）	Fundamentals of Materials Science I, College Physics, College Chemistry, Thermodynamics of Materials, Solid State Physics				
授课教师（Instructor）	Guo Qiang，KM Reddy	课程网址 (Course Webpage)	http:://ocw.sjtu.edu.cn/G2S/OCW/cn/CourseDetails.htm?Id=343		
*课程简介（Description）	（中文）《材料科学基础》是材料类和冶金类专业的核心基础课程。通过讲课、实验、课堂讨论和课外实践等各个教学环节，将金属学、陶瓷学和高分子物理的基础理论融合为一体，以研究材料共性规律，注重于材料的成分、组织结构、制备工艺和性能之间的内在联系，指导材料的设计和应用，并为学习后继专业课程、从事材料科学研究和工程技术工作打下坚实的理论基础。				
*课程简介（Description）	（英文）"Fundamentals of Materials Science" is one of the core curriculum for university/college students in the discipline of materials and metallurgy. The basic fundamentals of materials science is presented by lectures, experiments，class discussions, and extracurricular practice teaching，*etc*. In order to investigate the common laws for materials, the focus is on the internals relationships among the processing, structure, properties and performance for three different materials: metals, ceramic and polymer physics. The course provides guidance for materials design and application and lays a solid theoretical foundation for subsequent courses, materials science research and engineering technology. This is the second part of the course that covers diffusion, phase diagrams and phase transformations.				

课程教学大纲（course syllabus）						

*学习目标 (Learning Outcomes)	1、The fundamentals and frontiers of materials science & engineering（A3） 2、Systematic knowledge on the structure-property-processing-characterization tetrahedral.（A5.4） 3、The capability of discovering, analyzing and solving problems （B2）; The ability for sustained learning （B7） 4、Use of professional English for problem-solving and effective communication（B1）					

	Content	Duration (hours)	Type of teaching	Homework	Requirement	Type of evaluations
*教学内容、进度安排及要求 (Class Schedule & Requirements)	Introduction	1	Lecture		General knowledge	
	Fick's diffusion laws	2	Lecture/discussion		Deep understanding	
	Application of Fick's laws	2	Lecture/discussion	Homework	Understanding	
	Kirkendall effect and Darken equation	2	Lecture/discussion	Homework	Deep understanding	
	Solution to diffusion problems where diffusivity is a function of concentration	1	Lecture		Understanding	
	Thermodynamics of diffusion	1	Lecture		Deep understanding	
	Atomic mechanism of diffusion	3	Lecture/discussion	Homework	Deep understanding	
	Reactive diffusion	1	Lecture		Deep understanding	
	Diffusion in ionic solids and the molecular motion in polymers	2	Lecture/discussion	Homework	Deep understanding	
	Thermodynamics of phase diagrams	3	Lecture/discussion	Homework	Deep understanding	
	Fundamentals of phase diagrams	1	Lecture		Understanding	

	Single phase diagrams	1	Lecture/discussion	Homework	Deep understanding	
	Simple binary phase diagrams	5	Lecture/discussion	Homework	Deep understanding	Mid-term exam (closed book)
	SiO_2-Al_2O_3 phase digram	1	Lecture		Understanding	
	Fe-C phase diagram	3	Lecture/discussion	Homework	Deep understanding	
	Fundamentals of ternary diagrams	2	Lecture/discussion		Deep understanding	
	Immiscible ternary eutectic phase diagrams	2	Lecture/discussion	Homework	Deep understanding	
	Ternary euctectic phase diagrams with limited miscibility	2	Lecture/discussion	Homework	General knowledge	
	Other ternary phase diagrams	1	Lecture		General knowledge	
	Introduction of solid state phase transformations	3	Lecture		Understanding	
	Characteristics of solid state phase transformations	4	Lecture/discussion	Homework	Deep understanding	
	Nucleation & growth	4	Lecture/discussion	Homework	Deep understanding	
	Kinetics of phase transformations	1	Lecture		Understanding	

*考核方式 (Grading)	（成绩构成） The final grade includes class participation, homework, in-class quizzes, and exams: (1) Class participation: 10%。 (2) In-class quizzes and homework：20%; (3) Exams (closed book)：70%, where the mid-term exam comprises20%, and the final exam 50%.
*教材或参考资料 (Textbooks & Other Materials)	1) W. D. Callister, Jr., Fundamentals of Materials Science & Engineering, 5th Edition, John Wiley & Sons, Inc. New York, 2001. 2) 《材料科学基础(第三版)》，胡赓祥、蔡珣、戎咏华编著，上海交通大学出版社，2010

3) R. E. Smallman, Modern Physical Metallurgy, 4th ed. Butterworths, London, 1985
4) A. G. Guy, Introduction to Material Science, McGraw-Hill, New York, 1972
5) D. R. Gaskell, Introduction to thermodynamics of materials, 5th Edition, Taylor & Francis, 2008
6) D.V. Regone，Thermodynamics of materials, Volume I, John Wiley & Sons, 1995
7) Porter & Easterling，Phase Transformations in Metals & Alloys 2nd Edition，CRC Press，1992
8) R. W. Hertzberg, Deformation & Fracture Mechanics of Engineering Materials, John Wiley & Sons, 1976
9) Hull & Bacon, Introduction to Dislocations, 5th Edition, Elsevier, 2011

Materials Chemistry Syllabus

Course Information							
*Course Code	MSE2602-1	*Credit Hours	32		*Credits		2
*Course Name	Materials Chemistry						
Course Type	Required course						
Audience	Sophomore						
Language of Instruction	English						
*School	School of Materials Science and Engineering						
Prerequisite	College Chemistry; College Physics; Thermodynamics thermodynamics of material.						
Instructors	Huanan Duan, Chuanliang Feng		Course Webpage		https://oc.sjtu.edu.cn/courses/19017		
*Description	Materials chemistry is the study of the synthesis, structure, properties, and application of solid materials. Our technology-driven world is fuelled by advances in materials chemistry with examples of application in areas such as microelectronics, polymers, and energy technology. This course introduces the materials chemistry of several major categories of materials (metals, ceramics and glasses, semiconductors, polymers, nanomaterials) with the emphasis of materials synthesis. The topics span from traditional extractive metallurgy to more recent development of nanomaterials and biomaterials. Through the study of this course, students can master the basic knowledge and theory in the field of materials science and chemical preparation in the material industry, understand the industrial status of related fields, research frontiers, and the concepts of environmental protection and sustainable development that may be involved, and learn to analyze and solve problems by applying the basic knowledge and literature study. This course also lays a good foundation of knowledge in materials chemistry and thinking methods for the undergraduate study of materials discipline. The main contents of this course include the introduction of material chemistry, the theoretical basis of bonding theory and crystal field theory, basic metallurgy methods, the electrochemical methods, preparation methods for inorganic materials (including nanoparticles, thin films, ceramics etc.), synthesis and preparation of polymer materials; the chemistry of organic/inorganic hybrid materials.						

Course syllabus

	Chapter	Hours	Method	Assignment	Learning objectives	Quiz
	Chapter 1 Introduction to Maters Chemistry	2	Lecture	Homework (HW)	• To explain why different materials are different • To appraise the trend of materials development • To relate the Mater. Chem. to Mater. Sci. & Eng. and the outside world	
Chapter 2 Metals (6)						
	Metals	2	Lecture	HW	• To sketch the concept of electronic band structure • To use the electronic band structure to explain some properties of metals	
	Extractive Metallurgy	2	Lecture	HW	• To weight pyrometallury and hydrometallurgy by comparing two cases: extraction of Fe and Cu • To list general steps of hydrometallurgy • To explain pyrometallury, hydrometallurgy, and leaching.	
	Electrometallurgy	2	Lecture		• to use the standard reduction potential table to explain phenomena • to select appropriate electrolyte for electrolysis • to assess different corrosion control techniques	Quiz
Chapter 3 Ceramics and Glasses (8)						
	Overview and solid state reaction (SSR)	2	Lecture	HW	• To describe general steps involved in solid-state reactions • To explain diffusion and its mechanism	
	SSR	2	Lecture	HW	• To describe the driving forces for sintering • To name two types of sintering mechanisms and explain them	
	Solution chemistry	2	Lecture	HW	• To analyze the surface charge of a colloidal particle • To apply the EDL to analyze the stability of colloids	

Solution-based synthesis	2	Lecture		• To explain alkoxides, hydrolysis, and condensation • To analyze a sol-gel process • To explain the water property under hydrothermal conditions • To design an autoclave based on the solubility-temperature plots	Quiz

Chapter 4 Semiconductors (6)

Semiconductors and Si production	2	Lecture	HW	• To apply the band structure model to explain properties of semiconductor and working mechanisms of devices • To sketch the electronic band structure of doped semi and p-n junctions • To describe the CZ method and the float-zone method	
Lithography	2	Lecture	HW	• To describe photolithography: • Environment: clean room • Components: light source and photoresist • Step-by-step process of photolithography	
Thin film depositions	2	Lecture		• Be able to describe the basic mechanisms of the additive processes: • Physical Vapor Deposition (evaporation, sputtering) • Chemical Vapor Deposition	Quiz

Chapter 5 Polymers (10)

Polymer overview	2	Lecture	HW	• Basic concepts of polymers • Classification and naming of polymer compounds • Classification of polymerization reactions • Average molecular weight of polymer and its distribution • Polymer physical state and transformation	
Free radical polymerization	2	Lecture	HW	• Free radical polymerization mechanism • Chain-initiated reaction • Free radical polymerization kinetics • Average polymerization degree of polymer • Factors affecting free radical polymerization • Inhibition and retardation	

	Ionic polymerization	2	Lecture	HW	• Cationic polymerization • Anionic polymerization • The difference between ionic polymerization and free radical polymerization • • Coordination polymerization	
	Stepwise polymerization	2	Lecture	HW	• Gradual addition polymerization • The molecular weight distribution • Stepwise polymerization method	
	Organic/ inorganic hybrid materials chemistry	2	Lecture	HW	• Concept of organic / inorganic hybrid materials • Self-assembled organic / inorganic hybrid nanomaterials • Hybridization of organic components on inorganic surfaces • Bionic organic / inorganic hybrid materials	
	Summary					
*Assessment	HW 15% + Quiz 15% + Class participation 10% + midterm 10% + Final exam 50%
* Textbooks	There is no required textbook. Below are a few reference books: 1) Introduction to Materials Chemistry, Harry R. Allcock, Wiley 2008. 2) Materials Chemistry by B. Fahlman, Springer, 2011 (Available as a free ebook through the SJTU library website). 3) Ceramic Processing and Sintering by Rahaman, CRC Press, 2003. 4) Chemistry – the Central Science by Theodore L. Brown, H. Eugene LeMay, Jr., Bruce E. Bursten, Catherine J. Murphy, and Patrick Woodward, Pearson Education, Inc., 2009

Data Structure

Course Information

Course Code	ICE3402P	Credit Hours	32	Credits	2

Course Name	(中文 Chinese name) 数据结构
	(英文 English name) Data Structure

Prerequisite)	Have C++ basis

Instructor	LU Jialiang LI Hao	Course Webpage	https://oc.sjtu.edu.cn/courses/44241

Description	This course introduces advanced data structure such as different type of tree, Hash table and graph, some algorithm will also be revised. Data structure is one of the fundamental courses in Computer Science. It deals with storage and processing technique of data. The objective of the course is to master the following aspects: 1) Understand the logical relationship between data and processing requirements; 2) How to deal with data storage; 3) how to process data. The course will be divided into 5 parts: 1) Object-Oriented Programming (from C to C++)， list revised; 2) Binary Tree, Non-Binary Tree; 3) Sort, external sort; 4) Searching: Hashing and other method; 5) Graph

Course objectives and contents

Course Objectives	1) Understand the logical relationship between data and processing requirements; 2) How to deal with data storage; 3) Master basic data structures: list, tree, 4)Develop modeling capability using graph and advanced data structure

Class Schedule & Requirements & Course Objectives)	Chapter	Content	Objectives	Teaching hour	Teaching form	Homework and evaluation	Educational points	Course objective corresponded above
	1	Introduction to data structure	Understand the concept of data structure and basic tool for	2	Lectures	homework		1

		algorithm analysis					
2	List, Stak & Queue	Array, Linked List Stack, Queue	4	Lectures	Online Judging System		2,3
3	Binary Tree	Binary Tree/ Binary Search Tree	4	Lectures	Online Judging System/Quiz		2,3,4
4	General Tree	General Tree/ Sequential implementation	4	Lectures	Online Judging System/Quiz		2,3
5	Sorting	Internal sorting/external sorting	4	Lectures	Course Project		1,2
6	Heap	Heap/ Priority Queue	2	Lecture	Course Project		2,3
7	Searching	Hashing	2	Lectures	Course Project		2,3
8	Graph	Graph representation/ BFS/ DFS/ Algorithms	4	Lectures	Online Judging System/Quiz		3,4
9	Indexing	2-3 Tree/ B-Tree/ B+-Tree	4	Lectures	Quiz	和大型数据系统的关联，培养科技报国情怀	2,3
10	Revision		2	Lectures	homework		1,2,3,4

Grading	Continuous Evaluation: 60% 1. Assiduity 10% 2. Homework 50% Final Evaluation: 40% 1. Online Quiz 20% 2. Project + Report: 20%
Textbooks & Other Materials	Reference book: [1] A Practical Introduction to Data Structures and Algorithm Analysis by Clifford A. Shaffer, 3rd edition

Net Zero-Carbon Fuels

Course Information	
*课程名称 (Course Name)	（中文）碳中和燃料
	（英文）Net Zero-Carbon Fuels
课程类型 (Course Type)	Public course/Spring semester/APRU shared course
授课对象 (Target Audience)	Undergraduate or postgraduate students of any discipline with interests in low carbon technology, fuel technology, environment and sustainability.
授课语言 (Language of Instruction)	English
*开课院系 (School)	中英国际低碳学院 China-UK Low Carbon College

先修课程 (Prerequisite)	N/A	后续课程 (post)	N/A
*课程负责人 (Instructor)	Dr. Cheng Tung Chong	课程网址 (Course Webpage)	N/A

*课程简介（英文） (Description)	As nations bind together to tackle global climate change, one of the urgent needs is the energy sector's transition from being fossil-fuel reliant to embracing sustainable carbon-free solutions. This course aims to introduce a redefined perspective of fuel utilisation for the power and transportation sectors, placing emphasis on alternative fuels derived from renewable resources that are essential contributors to the goals of carbon neutrality. Some of the low or zero-carbon fuels such as hydrogen, ammonia, biofuels and emerging low carbon fuels adaptable to current or new energy systems will be explored in the context of production, utilisation, economics and sustainability. The impacts of future fuels on the environment, resource availability and social well-being need to be holistically considered and supported by diverse solutions, in alignment with the Sustainable Development Goals of Affordable and Clean Energy (SDG 7) and other related SDGs as put forth by the United Nations. From this course, the students will grasp the broad concept of alternative fuel production, application and challenges faced in moving towards a net zero-carbon society.

Course objectives and contents	

						Alignment with course learning outcome
*课程目标 (Course Object)	1. Describe the roles of alternative fuels for power and transportation sectors in the context of carbon neutrality in China and relate to the sustainable development goals. 2. Describe the production process, potential application and limitations of alternative fuels in the context of power and transportation sectors. 3. Assess the impact of alternative fuel usage on the local resources, society and nation in alignment of the sustainable development goals.					

	Chapter	Content	Credit hour	Teaching mode	Requirement	Teaching focus	Alignment with course learning outcome
*教学内容进度安排及对应课程目标 (Class Schedule & Requirements & Course Objectives)	1	**Introduction to SDG with emphasis on SDG 7**	2	Online lecture + discussion	Attendance	Understand the importance of SDG and sustainable development	1,2
	2	**Advancements of biofuels** Biodiesel, bioethanol and biogas production, application	4	Online lecture + discussion	Attendance	Comprehend the limitations that restricts or promote the production of biofuels.	1,2
	3	**Biofuels sustainability: EWF + SDG perspectives**	2	Online lecture + discussion	Attendance	Understand the sustainability issues related to biofuel production	3
		Topical review 1 (Biofuels) + Guest lecture	2	Group discussion + lecture	Assignment	Enhance teamwork and networking	1,2
	4	**Sustainable aviation propulsion** Production, application and sustainability	4	Online lecture + discussion	Attendance	Able to relate to the potential of China and other countries in producing sustainable aviation fuel.	3

	5	**Green hydrogen as energy carrier** Production, use (fuel cells and combustion) and vectors (inc. ammonia)	4	Online lecture + discussion	Attendance	Analyse the policy in China and other countries in promoting hydrogen	1,2
	6	**Green ammonia as energy carrier** Production, distribution, fuel cells, combustion	4	Online lecture + discussion	Attendance	Explore the current effort in promoting ammonia usage	3
		Topical review 2 (H$_2$ vectors) + guest lecture	2	Group discussion + lecture	Assignment	Enhance teamwork and networking	1, 2
	7	**Electrification** Power-to-X, transport electrification	4	Online lecture + discussion	Attendance	Explore the progress of electrification, economics, and impacts related to electrification policies	3
	8	**Emerging zero-carbon fuels** Production of methanol, waste-derived fuel, solar fuel	2	Online lecture + discussion	Attendance	Understand the emerging technologies related to zero-carbon fuel production	3
		Group project presentations	2	Group presentation	Presentation	Enhance teamwork and networking	3
*考核方式 (Grading)	（1）Attendance: 20% （2）Assignments: 40% （3）Presentation: 40%						

*教材或参考资料 (Textbooks & Other Materials)	1. Cheng Tung Chong, Jo-Han Ng, Biojet Fuel in Aviation Applications, 1st edition, Elsevier, 2021 2. Aldo Vieira da Rosa, Fundamentals of Renewable Energy Processes, 2nd ed. Academic Press, 2009 3. Agustin Valera-Medina, Rene Banares-Alcantara,Techno-Economic Challenges of Green Ammonia as an Energy Vector, 2020 Other supplemental materials will be provided during the course.
其它 (More)	Time table for the course: week 2-17 of Spring semester 2023 Every Tuesday, 14:00-15:40
备注 (Notes)	-

Week	Date	Day	Time	Topic	Credit hours	Teaching mode	Lecturer-in-charge
				Net Zero-Carbon Fuels (SDG Summer Course 2022)			
1	20/6	Mon	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**L1: Introduction to SDG with emphasis on SDG 7**	3	Online lecture + discussion	CCT
	21/6	Tue	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**L2: Green hydrogen as energy carrier** Production, use (fuel cells and combustion) and vectors (inc. ammonia)	3	Online lecture + discussion	AVM
	22/6	Wed	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**L3: Green ammonia as energy carrier** Production, distribution, fuel cells, combustion	3	Online lecture + discussion	AVM
	23/6	Thu	9:00-11:00 (UTC+1) 16:00-18:00 (UTC+8)	*T1: Topical review 1 (H_2 vectors)*	2	Group discussion	AVM
2	27/6	Mon	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**L4: Sustainable aviation propulsion** Production, application and sustainability	3	Online lecture + discussion	CCT
	28/6	Tue	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**L5: Advancements of biofuels** Biodiesel, bioethanol and biogas production, application	3	Online lecture + discussion	NJH
	29/6	Wed	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**L6: Biofuels sustainability: EWF + SDG perspectives**	3	Online lecture + discussion	NJH
	30/6	Thu	9:00-11:00 (UTC+1) 16:00-18:00 (UTC+8)	*T2: Topical review 2 (Biofuels)*	2	Group discussion	NJH
3	4/7	Mon	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**L7: Electrification** Power-to-X, transport electrification	3	Online lecture + discussion	CCT
	5/7	Tue	9:00-11:00 (UTC+1) 16:00-18:00 (UTC+8)	**L8: Emerging zero-carbon fuels** Production of methanol, waste-derived fuel, solar fuel	2	Online lecture + discussion	NJH
	6/7	Wed	9:00-11:00 (UTC+1) 16:00-18:00 (UTC+8)	*T3: Topical review 3 (Elec + EF)*	2	Group discussion	CCT
	7/7	Thu	9:00-12:00 (UTC+1) 16:00-19:00 (UTC+8)	**Group project presentations**	3	Group presentation	CCT/NJH/AVM
Total					32		

Course Syllabus

1.   Course description

Academic Communications in English: Writing and Presentation is a course focusing on project-based academic writing and oral presentation. The course is designed for developing students' basic skills of academic reading, writing and presentation. Students are required to collaborate and finish series of tasks for a research project and present their work to the class. It is also intended for improving their ability of presentation for seminars and conferences in the academic world.

The process of writing and editing academic research paper on the basis of literature review and research work will be presented. Strategies and skills for oral presentations will be introduced, with a number of examples to illustrate how to start, organize, conclude and deliver a speech most effectively. Cooperation in academics will be manifested and highlighted all through the course. The coursework will include discussions on ethics, writing styles and techniques, evaluation of information resources, a group research paper, and group oral presentations based on the research paper, etc. Development of academic ethics, critical thinking, exploration, cooperation, and responsibility are all emphasized and incorporated in the process of teaching and learning.

2.   Teaching methods

We are going to imitate the process of writing for publication and conference presentation through the approach of project-based learning and "learning by doing". We also employ the method of blended learning so that students can learn the knowledge on SPOC, practice in class through discussions and presentations, and apply the knowledge through writing the research paper and giving the conference presentation.

3.   Course arrangement

Week	lectures and homework
Week 1	An introduction to the course Presentation (individually): An introduction of yourself and your general research interest for finding your partners. Brainstorming for your topic
	Homework: 1) Search online for the 17 goals of United Nations and find your specific research topic together. 2) Prepare for a presentation of your research topic.
Week 2	Library sources Use of EndNote Plagiarism Presentation (Student 1 for the group): The topic for your research project
	Homework: 1) Decide on your final topic and search for your sources, export them to Endnote. 2) Do plagiarism test and try to get a certificate.
Week 3	Summary and paraphrase
	Homework: Reading preparation: Appendix 3 & 4
Week 4	Academic reading 1 Reading for information Note-taking
	Homework: Read the articles you have searched for your paper, take down notes for your research.
Week 5	Academic reading 2 Reading for classifying ideas
	Homework: Continue reading the articles you have searched for your paper, try to classify them into perspectives. Submit articles you have read with notes (individually).

	Presentation (Student 2 for the group): Summary of your reading	
Week 6	Language in writing COCA & Phrasebank	
	Homework: Plan for your research. Familiarize yourself with the use of COCA & Phrasebank.	
Week 7	Title & Outline	
	Homework: Try to figure out a title and work together on the outline for your paper. Prepare for a presentation of your outline / research plan.	
Week 8	Abstract Presentation of your outline / research plan (Student 3 for the group)	
	Homework: Revise your outline / research plan. Start collecting your data.	
Week 9	Introduction	
	Homework: Write the introduction.	
Week 10	Method and result	
	Homework: Collect and analyze your data. Write the methods and results of your paper.	
Week 11	Discussion and conclusion; citations and references	
	Homework: Write the discussion and conclusion. Add the citations and references. Submit the part of the 1st draft you are responsible for (individually).	
Week 12	Presentation lecture	
	Homework: Prepare for the presentation. Peer review and revision. Submit the peer review (individually). Combine all parts of the paper and submit the 2nd draft (cooperatively).	
Week 13	Teacher feedback 1 (Each group of students meet the teacher at due time in Tencent meeting room)	
	Homework: Prepare for the presentation. Revise your research paper.	
Week 14	Teacher feedback 2 (Each group of students meet the teacher at due time in Tencent meeting room)	
	Homework: Prepare for the presentation. Revise your research paper.	
Week 15	Research conference presentation (in the group of 3 students) 1	
	Homework: Prepare for the presentation. Revise your research paper.	
Week 16	Research conference presentation (in the group of 3 students) 2	
	Homework: Submit your final paper and presentation PPT (cooperatively).	

Note: Tasks in blue words are presentations in class, tasks in red words need submission.

4.   Textbook

Academic Writing and Presentation in English   《学术英语写作与演讲》

Authors: ZHANG Li, SHENG Yue   张荔 盛越

Tsing Hua University Press   清华大学出版社

5.   Evaluation
Final 40%+Mid 20%+Process 40%

Final：Research paper   **40%**
Mid：Presentation   **20%**
Process：   **40%**
    Participation and performance in class   10%
    SPOC learning   10% (50% videos and exercise + 1 discussion)
    Tasks in the process   20%

Syllabus for Elementary Chinese 1 (CL036)

Course Description

This course is to build a preliminary foundation in spoken Chinese for the students within limited time and enable them to communicate in the target language for some basic functions. 250 most frequently used Chinese characters will also be taught. Meanwhile passing HSK 2 is an optional target. This course is also helpful to those who want to study Chinese language in depth in the future. No prerequisite is required.

Teaching Materials and tools

Textbook: *Hello, Chinese! (1)* by Wang Jun & An Na Shanghai Jiao Tong University Press (digital version will be provided to students)

Hello, Chinese! (introduction to Chinese characters) by An N & Wang Jun Shanghai Jiao Tong University Press (Starting from Lesson 8) (digital version will be provided to students)

Online material (MOOC): https://www.coursera.org/specializations/learn-mandarin
Live broadcasting: Tencent meeting/Voov meeting
Wechat group: see canvas

Course Objectives

By the end of this course, the students will:
1.   Be familiar with the phonetic system in Chinese (hanyu pinyin).
2.   Build up a vocabulary of approximately 400 words.
3.   Be familiar with about 30 basic sentence patterns in Chinese and communicate with them.
4.   Have a command of 13 communicative functions as listed in the textbook, which facilitate life in China.
5.   Be able to recognize and write about 250 most frequently used Chinese characters.
6.   Be able to pass HSK 2 test.

Course structure and requirements

The course provides students with MOOC (online course) support in both MOOC platform and course videos format. A student can view the entire MOOC chapter on the platform (including videos and exercises), or only the course videos after each live class. He/she can also view the live class playback once the instructor uploads it to Canvas.
Homework is on-paper written work after each live broadcasting, and students need to take photographs of them and upload to the canvas system as one source of grade (Once a week, 13 in total). The table below shows the procedures
Attendance in tencent meeting will be a crucial part of the course, anyone who fail to attend more than 1/3 of classes will fail the course immediately. A teaching assistant will check the attendance twice during each live class (one at the beginning and one by the end of the class) Quizzes will be given at the beginning of a class once the previous chapter of the book has been finished, however, due to the online instruction situation, they will not consist part of your grade. Homework (which should be uploaded to Canvas) consists a big part of the total grade. The form of Mid-term and Final exam will be introduced in the live classes.

Grading System

Quizzes…………………………………………………0 %

Homeworks……………………………………… …30 %

Mid-term……………………………………… …30 %

     Final Exam …………………………….……………40%

     Total…………………………………………….....100% (passing grade: 60%)

Course Schedule (two 1.5 hr live-streamed classes per week)

Week	Contents	Objectives
2	Introduction, Phonetics	Learning the Pinyin system in Chinese
	Lesson 1 Hello!	Learning how to greet people Learning how to introduce one's name and nationality
3	Practice for Lesson 1	
	Lesson 2 What's the time?	Learning how to express numbers Learning how to express time: the time, years, month and dates
4	Practice for Lesson 2	
	Lesson 3 Go shopping	Learning how to talk about money Learning the expressions used in shopping Learning how to bargain
5	Practice for Lesson 3	
	Lesson 4 How many people are in your family?	Learning how to talk about family, occupations and age
6	Practice for Lesson 4	
	Lesson 5 What would you like to eat?	Learning how to order and talk about food
7	Practice for Lesson 5	
	Lesson 6 How to get to the library?	Learning how to ask for directions and places
8	Practice for Lesson 6	Learning how to talk to taxi drivers
	Lesson 7 What's your phone number?	Learning how to ask for phone numbers Learning how to talk about hobbies and leisure activities
9	Practice for Lesson 7	
	Lesson 8 What's up?	Learning how to make phone calls Learning how to make an appointment
10	Practice for Lesson 8 **Mid-term Exam**	
	Lesson 9 Where is my cell phone?	Learning how to express the location of things and places
11	Practice for Lesson 9	
	Lesson 10 Are you feeling sick?	Learning some vocabulary for the human body Learning how to ask about and describe one's health
12	Practice for Lesson 10	
	Lesson 11 I want to borrow	Learning the expressions related to the

	some Chinese books	library
13	Practice for Lesson 11	Learning how to express capability and possibility
	Lesson 12 I would like to exchange for some RMB	Learning the expressions related to the bank
14	Practice for Lesson 12	Learning how to express big numbers
	Lesson 13 Please clear the table	Learning the expressions for housework
15	Practice for Lesson 13	Learning the "bǎ" sentence
	Lesson 14 I want to take a trip	Learning the expressions related to travel
16	Practice for Lesson 14	Learning how to talk about travel plans
	Lesson 15 I want to book a flight ticket	Learning how to book flight tickets and hotel rooms
17	Practice for Lesson 15	Learning the expressions used in the airport
	Final Exam	

Introduction to Solid Mechanics - VM 211

Lecture: Tuesdays and Thursdays 14:00-15:40; Fridays 14:00-15:40 (first six JI weeks)
Location: Dong Zhong Yuan (东中院) E3-304
Book: Statics and Mechanics of Materials by R. C. Hibbeler, 4nd Edition

Instructor	E-Mail	Telephone	Office hour
Prof. Yanfeng Shen 申岩峰	yanfeng.shen@sjtu.edu.cn	18721333357	Mon. 10:00 - 11:30
			Room 502, JI Building
			Online: Feishu shared
			Or via appointment

Teaching assistant:

Name	Email address	Office hours
Xiaojing Tan 谭孝璟	kyletanxj@sjtu.edu.cn	Thu. 20:00 - 22:00
		Room 326I, JI Building

Recitation classes: Thu. 18:20 – 20:00
Location: Offline: E4-102 (Dong Zhong Yuan 4-102)   Online: Feishu shared in VM211 group

Course Description

Develop an understanding of the physical behavior of materials under load. The course emphasizes equilibrium, compatibility of deformation, and material behavior. Weekly lectures are given on theory and applications in statics, mechanics and structural engineering. Applications include axial loads, thermal stresses, bending, shear, and torsion, combined loadings, stress and strain transformations.

Introduction, Aims, Objectives

The Statics and Mechanics of Materials course provides the knowledge of the basic theories and experience through applying theory to solve real engineering problems in statics, mechanics, and structural analysis. The secondary objective of the course is to provide the knowledge and experience needed to communicate problems and solutions to others.

Specific course objectives are as follows:

1. Calculate force and moment resultants & develop an understanding of static equilibrium
2. Draw free body diagrams
3. Assign loadings to mechanical systems
4. Satisfy equations of friction and equilibrium
5. Structural analysis for truss structures (Assumptions and applications, Method of Joints, Method of Sections)
6. Geometric Properties and Distributed Loadings (Center of mass/gravity, moment of inertia, resultant forces for distributed loadings)
7. Analyze Internal Loadings (Shear and Moment Diagrams)
8. Analyze stresses due to axial stress, shear stress

9. Calculate modulus of elasticity, Poisson's ratio, shear modulus from stress vs. strain diagrams
10. Understand basic mechanics of materials terminology
11. Apply theory to analyze:
    - thermal stresses and strains
    - statically indeterminate axial members
    - torsional stresses & strains in circular shafts, power transmission
    - bending behavior of homogeneous and composite, prismatic and tapered beams
    - shear behavior of beams and shear flow
    - stresses in thin-walled pressure vessels
    - stresses in members subject to combined loadings
12. Use Mohr's circle to analyze stress and strain components
13. Transform stress and strain components from one orientation of the coordinate system to another orientation

Grading Policy

Item	Part of Class	Percentage
Homework	ALL	20
Exam 1* (Oct. 12)	Statics and Mechanics	15
Exam 2* (Nov. 11)	Mechanics of Materials	30
Final Exam* （Dec. 14）	Comprehensive & Structures	35

*For each exam, you are allowed to bring one A4 sheet of notes made on your own.

Any student who obtains at least 60% of the weighted average points from the above grading components will pass and will get a grade between A+ and D (inclusive).

The rest of students can still pass the course by getting 70% from the final exam. These students will get a grade of D.

The Professor possesses the authority to offer bonus points to students who make contribution to the active class atmosphere.

Classroom Policies

Expectations

Bring your book, calculator, notes, and an open mind to class every day. Class participation is encouraged but not enforced due to COVID-19. The lectures will be given in a online/onsite hybrid mode.

Homework assignments

Homework is due at the beginning of class on due date. Late work receives 20% reduction/day.

Make-up exams

No make-up quizzes or exams will be given except in cases of emergency.

Dishonesty

Any form of dishonesty or falsehood related to the general conduct of the class (exams, homework, etc.) will be considered a major offense and will be brought before the Honor Council

for appropriate action. This includes submitting an in-class quiz for someone else.

<mark>Homework policy: You can discuss your solution with your classmates, but must finish the writing of your homework on your own. The use of other people's solution in writing yours is prohibited.</mark>

Cellphones and Texting

Cellphones must be turned off or be in the silent mode during class hours. Cellphone operation (including reading or sending text messages) during class hours is not allowed and will be considered as cheating during exams.

Laptops

You are strongly discouraged to use laptops in class except **quickly** checking materials related to this course.

Tentative Schedule

week	Day	Date	Tentative Lecture Topics	Assignment	Due
1	Tue	09-14	Class Introduction; Chapters 1 and 2		
	Thurs	09-16	Chapter 3	HMWK01	
	Fri	09-17	Chapter 4		
2	Tue	09-21	Moon Festival (No Class)		
	Thurs	09-23	Chapter 5		
	Fri	09-24	Chapter 6	HMWK02	HMWK01
3	Tue	09-28	Chapter 7a		
	Thurs	09-30	Chapter 7b		
	Fri	10-01	National Holiday (No Class)		
4	Tue	10-05	National Holiday (No Class)		
	Thurs	10-07	National Holiday (No Class)		
	Fri	10-08	Midterm Exam Review		HMWK02
5	Tue	10-12	Midterm Exam 1 (Chapter 1 → Chapter 6)		
	Thurs	10-14	Chapter 8a	HMWK03	
	Fri	10-15	Chapter 8b		
6	Tue	10-19	Chapter 8c		
	Thurs	10-21	Chapter 9a	HMWK04	HMWK03
	Fri	10-22	Chapter 9b		
7	Tue	10-26	Chapter 10a		
	Thurs	10-28	Chapter 10b	HMWK05	HMWK04
8	Tue	11-02	Chapter 11a		
	Thurs	11-04	Chapter 11b		
9	Tue	11-09	Chapter 11c+ Midterm Exam Review	HMWK06	HMWK05
	Thurs	11-11	Midterm Exam 2 (Chapter 7 → Chapter 11)		
10	Tue	11-16	Chapter 12b		HMWK06
	Thurs	11-18	Chapter 13	HMWK07	
11	Tue	11-23	Chapter 14a		
	Thurs	11-25	Chapter 14b	HMWK08	HMWK07
12	Tue	11-30	Chapters 15 and 16a		
	Thurs	12-02	Chapters 16b	HMWK09	HMWK08
13	Tue	12-07	Chapter 17		
	Thurs	12-09	Final Exam Review		HMWK09
14	Tue	12-14	Final Exam (Comprehensive)		

ECE 4710J: Introduction to Data Science

Ailin Zhang (ailin.zhang@sjtu.edu.cn)

Spring, 2022

Course Description

Data science is a combination of data, computation and analytical thinking, and it is redefining processes in problem solving and decision making. In this class, we will explore key areas of data science including question formulation, data collection and cleaning, visualization, statistical inference, predictive modeling, and decision making.

The course puts a strong emphasis on solving real-world data driven problems. To be more specific, the course will cover languages for transforming, querying and analyzing data; algorithms for machine learning methods including regression, classification and clustering; principles behind creating informative data visualizations; and statistical concepts of measurement error and prediction.

Prerequisites

While we are not enforcing prerequisites during enrollment, it is strongly recommended that you have basic understanding/ knowledge of the following aspects. Furthermore, all of the prerequisites will be used starting very early on in the class/ homework.

- Foundations of Math and Statistics

  Linear algebra, probability and statistics are essential. We will need some basic concepts like linear operators, eigenvectors, derivatives, and integrals to enable statistical inference and derive algorithms.

- Computing

  We will use python as the computing language for teaching and homework. You need to be familiar with python programming (e.g., for loops, lambdas, debugging, and complexity)

  You can use the following tutorial to pick up your python skill.

  General Python: https://docs.python.org/3.9/tutorial/index.html
  Numpy and Pandas: https://cs231n.github.io/python-numpy-tutorial/

Grading Policy

The typical JI grading scale will be used. I reserve the right to curve the scale if there are less than 30% of students with grades $\geq$ A. The grade will count the assessments using the following proportions:

- **<u>30%</u>** Homework (5-7 submissions)

- **<u>20%</u>** Project

- **<u>20%</u>** Midterm

- **<u>30%</u>** Final

- **<u>3%*</u>** Extra Credit

Course Agenda and Timeline

The agenda is tentative and subject to change. The bullet points are key concepts you should grasp after each week, and also as a study guide before exams.

Week 01 Recap and Fundamentals

- Introduction

- Sampling and Probablity

Week 02 Estimation and Bias

- Estimators and Bias

- Jupyter notebook

Week 03 Data Acquisition and Manipulation

- Sampling

- Randomness

Week 04 Data Manipulation

- Pandas

- Regex

Week 05 Data Preprocessing

- Data cleaning

Week 06   Data Preprocessing

- Data visualization (matplotlib, seaborn)

Week 07   Modeling and **Midterm**

- General overview of modeling

Week 08   Feature Engineering

- Feature generation
- KDE

Week 09   Regression

- Linear regression
- Ordinary Least Squares

Week 10   Bias and Variance

- Regularization
- Gradient descent

Week 11   Classification

- Logistic regression
- Model Evaluation

Week 12   Classification

- Decision Tree/ Random Forest
- Boosting

Week 13   Unsupervised learning

- PCA
- Clustering

Week 14   Clustering and Review

- **Project due**
- Review for final

We want you to succeed!

If you are feeling overwhelmed, visit our office hours and talk with us, and we want to help you succeed.

Course Syllabus

ECE2810J Data Structures and Algorithms

Summer

Course Description:

Introduction to algorithm analysis and big-Oh notation; Fundamental data structures including priority queues, hash tables, binary trees, binary search trees, balanced trees, and graphs; Searching and sorting algorithms; Basic graph algorithms; Introduction to dynamic programming.

Instructor:

Textbook (Recommended but not required):

1. *Data Structures and Algorithm Analysis*, by Clifford Shaffer. Online available: http://people.cs.vt.edu/~shaffer/Book/C++3e20120605.pdfO
2. *Data Structures and Algorithms with Object-Oriented Design Patterns in C++*, by Bruno Preiss.
3. *Introduction to Algorithms*, *3rd edition*, by Thomas Cormen, Charles Leiserson, Ronald Rivest, and Clifford Stein, MIT Press, 2009.

Class Webpage:

Log into Canvas at https://umjicanvas.com. Announcements, lecture slides, assignments, and grades will be posted on the class webpage.

Course Prerequisites:

Ve280 Programming and Elementary Data Structures and Ve203 Discrete Mathematics.

Grading Policy (Tentative):

There will be some quizzes, 6 written assignments, 5 programming assignments, one midterm exam, and one final exam. The grading distribution is:

Class participation:	10%
Written assignments:	15%
Programming assignments:	30%
Midterm Exam:	20%
Final Exam:	25%

Any questions about the grading of the projects or exams must be brought to the attention of your TAs or the instructor within one week after the item is returned.

Exam

The exams will be closed book ones. No electronic devices are allowed in the exams.

You are expected to take both exams at the scheduled times. If you miss an exam, and a medical or personal emergency is not involved, you will receive a zero for that exam. If you anticipate an exam in another course, you must notify the instructor at least one week before the exam date.

Academic Integrity:

1. All students are expected to attend all of the lectures. You cannot do intern on the lecture days.

2. All programming assignments must be done by yourself independently. You may discuss the project in oral with other student. However, you may not read/copy others' solution and you may not use test cases from others. In all cases in which we have reason to believe that cheating has occurred, we will report your case to the Honor Council for evaluation.

3. You may not share codes with others whether during or after the semester, including making it publicly available in any form (e.g. a public GitHub repository). You may not share test cases with others, as we consider your test cases part of your solution.

4. Exams will be given under the JI's Honor Code and will require individual efforts.

Teaching Schedule (Tentative)

Lecture	Date	Teaching Activities (Topics and Exams)
1	05/08	Course Introduction;
2	05/10	Asymptotic Algorithm Analysis;
3	05/15	Asymptotic Algorithm Analysis; Analyzing Programs;
4	05/17	Basic Sorting;
5	05/19	Merge Sort;
6	05/22	Quick Sort;
7	05/24	Comparison Sort Summary; Non-comparison Sort;
8	05/29	Radix Sort; Linear-time Selection;
9	05/31	Linear-time Selection;
10	06/02	Hashing Basics;
11	06/05	Hashing: Hash Function Design and Separate Chaining;
12	06/07	Hashing: Open Addressing;
13	06/12	Rehashing; Binary Trees;
14	06/14	Binary Tree Traversal;
15	06/16	Priority Queues; Heaps;
16	06/19	Priority Queues; Heaps; Binary Search Trees;
17	06/21	Midterm Review;
18	06/26	Midterm;
19	06/28	Binary Search Trees;
20	06/30	Binary Search Tree Time Complexity;
21	07/03	Binary Search Tree: Other Useful Operations;
22	07/05	k-d Trees; AVL Trees;
23	07/10	AVL Trees;
24	07/12	AVL Trees; Red-black Trees;
25	07/14	Red-black Trees;
26	07/17	Graph; Graph Representation; Spatial Data Structures
27	07/19	Graph Search; Topological Sorting;
28	07/24	Topological Sorting; Minimum Spanning Trees;
29	07/26	Minimum Spanning Trees; Shortest Path;
30	07/28	Dynamic Programming: Matrix-Chain Multiplication;
31	07/31	Dynamic Programming: Longest Common Subsequence;
32	08/02	Final Exam Review;

Syllabus

Content	Hours	Format
Introduction: basic, comparative and evolutionary virology, viral life cycle and medical aspects associated with infections.	2	Lecture + interactive discussions
Replication of DNA-containing viruses with a linear genome.	4	Lecture + interactive discussions
Replication of DNA-containing viruses with a circular genome.	4	Lecture + interactive discussions
Transcription of DNA-containing viruses.	4	Lecture + interactive discussions
Replication and transcription of reverse-transcriptase-containing viruses.	4	Lecture + interactive discussions
Replication and transcription of RNA-containing viruses.	6	Lecture + interactive discussions
Application of viral techniques in biotechnology, neuroscience and medicine	6	Lecture + interactive discussions
Concluding remarks and systematic review.	2	Lecture + interactive discussions

Grading Policy

Coursework will be weighted as follows:
    1. Final exam (presentation + Q&A)   80%
    2. In-class work   10%
    3. Attendance   10%

80% +   10% +   10% =   100%

Teaching

Summary of the course **Scientific Writing and Presentation**

Course description
The objective of this course is to teach students how to write a paper, an abstract in English for publication in a scientific journal and to teach students the oral presentation and poster presentation skills needed to present their results at international scientific conferences. Moreover, the students will learn how to communicate with editors and reviewers of the journals. The course includes both lectures and tutorials with a number of in-class writing exercises and discussion of good and not-so-good writing practices. The tutor will particularly emphasize graphical organization, drafting and finalizing research publication figures and posters. The course will finish with an in-class poster presentation with oral discussion. Students who complete this course will learn what to do to get their research published and how best to present their work at a scientific conference.

Distribution of content
Content
Hours

Warm up and introduction to the writing course. Grammar, punctuation, linguistics of scientific text. Analysis and troubleshooting.
2

Structure of the scientific paper. Principles of text fractalization.
2

Choosing the journal for publication, article types. Predatory publishing houses and journals.
2

Most common mistakes in writing and creating graphical items.
4

Communication with reviewers and editors. Writing a cover letter.
2

Practical exercises and in-class analyses of abstracts, figures and posters.
16

Scientific presentation practice. In-class poster presentation and discussions.
4

Summary of the course **Application of Viral Techniques and Introduction to Molecular Virology**

Course description

This course involves a comprehensive overview of replication, integration and transcription mechanisms both RNA- and DNA-containing viruses of prokaryotes and eukaryotes. It is therefore primarily intended for undergraduate or graduate students already familiar with basic molecular biology. The lectures will focus on regulatory molecular biology mechanisms in order to give the students a broad overview as well as aid them to understand deeper signaling pathway interactions, solve genetic problems and ideate their future projects. This course may meet the needs of advanced undergraduate students with interests in molecular biology and virology. At the same time, it may serve as a refresher course in molecular biology for graduate students willing to explore replication and transcription regulation from different, often extreme angles which in viruses often go beyond basic mechanisms. Furthermore, this course provides a comparative analysis of viral applications in modern biotechnology, neuroscience and medicine which could be useful for students interested in these subjects. This is a typical lecture course in which topics are narrated by the instructor.

Distribution of content
Content
Hours

Introduction: basic, comparative and evolutionary virology, viral life cycle and medical aspects associated with infections.
2

Replication of DNA-containing viruses with a linear genome.
4

Replication of DNA-containing viruses with a circular genome.
4

Transcription of DNA-containing viruses.
4

Replication and transcription of reverse-transcriptase-containing viruses.
4

Replication and transcription of RNA-containing viruses.
6

Application of viral techniques in biotechnology, neuroscience and medicine
6

Concluding remarks and systematic review.

2

Food Quality and Safety Detection Technology Syllabus

课程代码 Course Code	FOST8011	*学时 Teaching Hours	32	*学分 Credits	2
*课程名称 Course Name	（中文）食品质量安全检测技术				
	（English） Food Quality and Safety Detection Technology				
*授课语言 Instruction Language	全英文 English				
*开课院系 School	农业与生物学院 （College of Agriculture and Biology）				
先修课程 Prerequisite	食品微生物学 Food Microbiology，食品化学 Food Chemistry				

授课教师 Instructors	姓名 Name	职称 Title	单位 Department	联系方式 E-mail
	施春雷 Chunlei Shi	研究员 Professor	食品科学与工程系 Department of Food Science & Technology	clshi@sjtu.edu.cn
	陆维盈 Weiying Lu	副教授 Associate Professor	食品科学与工程系 Department of Food Science & Technology	weiying.lu@sjtu.edu.cn

*课程简介 （English） Course Description	Traditional chemical and microbiological techniques for food quality and safety are increasingly being replaced by a new generation of rapid or alternative methods able to produce results much more quickly and reliably. This course reviews the current status of these techniques from an international perspective, and with particular emphasis on commercially available detection and estimation systems.
*教学安排 Schedules	Week

*Schedules	1	Content	Hours	Format	Instructor
	2	Overview on detection technologies for food quality and safety	3	Classroom Teaching	Chunlei Shi
	3	Introduction to analytical chemistry methods	3	Classroom Teaching	Weiying Lu
	4	Chromatographic and spectroscopic techniques	3	Classroom Teaching	Weiying Lu
	5	Mass spectrometric techniques	3	Classroom Teaching	Weiying Lu
	6	Literature reading and discussion (1)	3	Group Discussion	Weiying Lu

	7	Introduction to traditional biological methods	3	Classroom Teaching	Chunlei Shi
	8	Novel omics technology	3	Classroom Teaching	Chunlei Shi
	9	Novel nano technology	3	Classroom Teaching	Chunlei Shi
	10-11	Novel biosensor technology	3	Classroom Teaching	Chunlei Shi
		Literature reading and discussion (2)	6	Group Discussion	Chunlei Shi
		* Grading Policy 1. Write a literature review of no less than 5000 characters in English on interested topics (50%) 2. Speech and discussion (40%) 3. Class performance (10%)			
* Textbooks & References	1. Perry G. Wang, Mark F. Vitha, Jack F. Kay. High-Throughput Analysis for Food Safety. John Wiley & Sons, Inc., 2014. 2. Mary E. Torrence, Richard E. Isaacson. Microbial food safety in animal agriculture: current topics. Iowa State Press, 2003. 3. Omar A. Oyarzabal, Sophia Kathariou. DNA Methods in Food Safety: Molecular Typing of Foodborne and Waterborne Bacterial Pathogens. John Wiley & Sons, Ltd., 2014.				
Notes					

Shanghai Jiao Tong University
Law School

Course Information

Academic Year 2021

Course Code: LLAW6110

Course Name: Law and Financial Markets

Course Description:

This course involves an examination of the legal framework governing banking, securities and insurance markets in China.

The course will convey some basic concepts, norms and principles in financial markets, financial law and financial regulation. These concepts, norms and principles include financial liberalization, financial repression, regulatory arbitrage, regulatory failure, regulatory capture, regulatory competition, among others.

The course begins with a discussion of the central bank, the People's Bank of China, regarding its role, activities, and regulatory power. The course will cover other main financial regulators such as CBIRC, CSRC and SAFE in China. Entry into the business of banking and regulation of the activities of banking business are examined. In addition to the regulatory regime, the law of negotiable instruments and the international transaction aspects of banking business are also treated. The course will discuss such matters as the types of security interests, principal terms of most common forms of loan facilities, basic structure of syndicated loan and international bond issues. The course will also address the causes, systemic risks and potential regulatory instruments in relation to China's booming shadow banking sector.

The course then moves into the regulatory regime governing the banking, securities and insurance industries. Restrictions of entry and activities of banking, securities, and insurance companies are examined. Prudential management and investment limitations are also dealt with. Regulatory supervision of insurance companies and regulation of insurance agents and brokers are analysed. Other topics of insurance law include: insurable interest, subrogation, the insurance contract, third party claimants, and bad faith claims.

Shadow banking would be investigated and its functions, rationales, underlying logics, and regulatory instruments would be studied in the Chinese context.

The business part of the course is to make students appreciate, distinguish and make use of terms and conditions in financial transaction-related contracts. From time to time, we would separate students into groups and ask them to take opposite roles in negotiating and drafting contracts including loan agreement, security agreement and equity transfer agreement. This is the practical part of the course. The purpose is to train our students to grasp practical experience in the course.

Expected Course Learning Outcomes:

At the end of this course, students who fulfill the requirements of this course will be able to:

➢ Describe and explain various theories covered such as financial liberalisation and financial repression theories;
➢ Describe the key features of China's financial markets;
➢ Use relevant information about financial law to explain economic phenomena and events;
➢ Apply contractual terms to various financing transactions such as lending transactions;
➢ Understand instructions to assist drafting relevant documents and legal concepts and doctrines in structuring banking transactions;
➢ Appreciate the different results from different documents;
➢ Undertake constant review of documentation, the law, and the interpretation of documents by the courts;
➢ Explain the importance of shadow banking from both business and regulatory perspectives;
➢ Understand the difficulty in reforming and improving the regulatory framework for the entire financial markets;
➢ Demonstrate legal skills and knowledge in drafting and negotiating documents in hypothetical cases.

Proposed Learning Activities:

1. Study reading materials and prepare for the classes beforehand

2. Participate in the class discussions or group discussions

3. Undertake some basic research tasks and present the research results to the class

4. Negotiate transactional documents in hypothetical cases

5. Draft one or two financial documents

Content:

Lecture 1: Financial Market, Financial Law and Financial Regulation

Lecture 2: Financial Regulators and Regulatory Framework

Lecture 3: Banks and Banking Regulation

Lecture 4: Capital Market and Securities Regulation

Lecture 5: Insurance Market and Insurance Regulation

Lecture 6: Key Financial Issues in US-China Trade War

Lecture 7: Financial Transactions

Lecture 8: Contractual Terms in Finance Documents

Lecture 9: Negotiation Exercises

Lecture 10: Drafting Exercises

Lecture 11: Revision

Proposed Assessment:

100% assessment – close book exam OR essay

Prerequisite / Co-requisite:

Ideally, the students should have some basic knowledge of Chinese legal system.

Any proposed cap on student numbers (subject to confirmation by the Head of the Department of Law):

No.

References:

Shen Wei: Conceptualizing the Regulation Thicket: China's Financial Market after the Global Financial Crisis
ISBN9780367410537
Routledge 2020

Shen Wei: Chinese Business Law: Narrative and Commentary
ISBN 978-988-13956-7-2
Wolters Kluwer 2016

Shen Wei: Shadow Banking in China: Risk, Regulation and Policy
ISBN 978 1 78471 677 6, xiv+455 pp.
Edward Elgar 2016

Shen Wei: Investor Protection in Capital Markets – The Case of Hong Kong
ISBN 978-962-661-756-4
Sweet & Maxwell 2015

Shen Wei: The Anatomy of China's Banking Sector and Regulation
Wolters Kluwer 2014
ISBN 978-988-12216-7-4

研究生课程教学大纲（**Syllabus**）

课程代码 Course Code	**PO6011**	*学时 Teaching Hours	48	*学分 Credits	3
*课程名称 Course Name	（中文）多相流与传热 （English）Multiphase flow and heat transfer				
*授课语言 Instruction Language	英文/English				
*开课院系 School	机械与动力工程学院/ School of Mechanical Engineering				
先修课程 Prerequisite	传热学，流体力学，高等数学/ Heat transfer, fluid dynamics, advanced mathematics				

授课教师 Instructors	姓名 Name	职称 Title	单位 Department	联系方式 E-mail
	胡珀/Hu,Po	讲师/Lecturer	机械与动力工程学院/ School of Mechanical Engineering	Pohu@sjtu.edu.cn

*课程简介（中文）Course Description	多相流现象在热动工程、核工程、化工、机械等众多工业领域及日常生活中有广泛存在，对多相流的研究在众多学科中已通过实验和分析等手段广泛开展，许多相关专题仍然是前沿课题。本课程将通过课堂授课，使学生掌握多相流的主要概念、模型与分析方法，理解主要的多相流研究思路，了解当前多相流的前沿问题。 **教学目标：** 　　使学生具备运用所学的多相流知识，针对各专业的实际问题，分析求解或设计实验求解的能力，本课程旨在教会给学生以下内容： 1.　理解多相流基本特征和掌握运动方程 2.　通过学习多相流的动力学分析方法，具备实际分析多相流问题的能力。 3.　通过实践环节的锻炼，加强对专业知识的积累

*课程简介 （English） Course Description	Multiphase flow exists widely in industries and everyday life, such as thermal energy and power engineering, nuclear engineering, chemical engineering and power machinery engineering. The research on multiphase flow has been carried out in various fields using analytic and experimental methods. Many of them are still on-going research topics. The current course covers major ideas, models, analytic methods and frontier topics in multiphase flow. **Objectives:** The course will help students to develop capability to analyze or design an experiment to solve specific problems emerging from different fields. It is intended to provide students with the following benefits: 1, Understand the characteristics of multiphase flow and master motion equations. 2, Learn multiphase flow dynamics, and be capable of analyzing the multiphase flow problem. 3, Reinforce knowledge through practice with realistic problems

教学内容 Content	授课学时 Hours	教学方式 Format	授课教师 Instructor
多相流导论：Introduction	3	课堂教学 Lecture	胡珀 Po Hu
多相流运动方程：Motion equations	3	课堂教学 Lecture	胡珀 Po Hu
粒子运动 I：Particle motion I	3	课堂教学 Lecture	胡珀 Po Hu
粒子运动 II：Particle motion II	3	课堂教学 Lecture	胡珀 Po Hu
气泡和空泡研究：Bubble and cavitation	3	课堂教学 Lecture	胡珀 Po Hu

*教学安排
Schedules

	沸腾和凝结 Boiling and condensation	3	课堂教学 Lecture	胡珀 Po Hu
	多相流的流型 Flow pattern	3	课堂教学 Lecture	胡珀 Po Hu
	均相流模型 Homogeneous flow model	3	课堂教学 Lecture	胡珀 Po Hu
	分离流模型 Separated flow mode	3	课堂教学 Lecture	胡珀 Po Hu
	漂移流模型 Separated flow mode	3	课堂教学 Lecture	胡珀 Po Hu
	泡状流分析 Flow with bubble	3	课堂教学 Lecture	胡珀 Po Hu
	滴状流分析 Flow with gas	3	课堂教学 Lecture	胡珀 Po Hu
	颗粒流分析 Granular flow	3	课堂教学 Lecture	胡珀 Po Hu
	多相流稳定性分析 Multiphase flow stability	3	课堂教学 Lecture	胡珀 Po Hu
	多相流实验技术和前沿 Experiment and frontier topics	3	课堂教学 Lecture	胡珀 Po Hu
	课程设计（大作业）Project	3	实践 Practice	胡珀 Po Hu

*考核方式 Grading Policy			
	1	课堂出席	10%
	2	个人作业	15%
	4	课程设计	60%
	5	答辩评估	15%

　　每人独立完成一个与多相流相关的设计/分析小课题，并提交小论文。这个课题实践的目的是，让所有学生应用他们在课堂中学到的知识，初步解决感兴趣的专业问题。要求学生由教师指定或自己提议的课题题目，并在教师的指导下，确认需要分析的问题，通过分析或数值方法求解。

Course activities are weighted in the following way:

1	Class attendance	10%

2	Individual assignments	*15%*	
4	Final project	*60%*	
5	Presentation assessments	*15%*	

A key component of this class is for each student to solve a realistic problem or design an experiment to explore new phenomena in the final class session. Final report/mini-paper is expected on the specific problem selected together with the professor. Then the report together with a presentation will be graded according to its technical quality, and skill of independent research.

| *教材或参考资料
Textbooks & References | **Fundamentals of multiphase flow** Christopher E. Brennen Cambridge University press 2005 ISBN 0521 848040 |
| 备注
Notes | |

备注说明：

　1．带*内容为必填项；

　2．课程简介字数为 300-500 字；教学内容、进度安排等以表述清楚教学安排为宜，字数不限。

China's Social Welfare Policies and Practices

Lecturer: Dr. Fan Yang, Associate Professor at the School of International and Public Affairs, Shanghai Jiao Tong University

Introduction

Social welfare policies and practices is a mirror of the relationship between state and people. China's social welfare policies have witnessed vast changes in the past more than half a century, and a course in introducing the dynamic process and revealing the internal logic therein will provide a desirable angle for foreign students to understand China, as well as foster their critical thinking as with the existing frameworks in analyzing Chinese society and policy process.

This course is divided into two major sections, namely 1) the welfare policy introduction and analysis and 2) the welfare policy implementation mechanism analysis. The welfare policies covered include: pension, medical insurance, social assistance, housing, and migrant children welfare. Three guest speakers will be invited to talk about related topics, including doctor-patient conflicts, gender equality, housing and intimate relationship, and NGOs and migrant children welfare.

Goals

This is a 3-credit course, containing a total of 48 hours' courses that are divided into 16 weeks. The teaching goals include: students are able 1) to have systematic

knowledge about China's social welfare policies; 2) to know how these welfare policies are implemented and who are implementing them; 3) to use interdisciplinary and comparison perspective to analyze the logic of these welfare policies.

Assessment

The assessment of the course includes: 1) attendance, namely the attendance of course, participation of in-class discussion; 2) coursework, namely the accomplishment of group presentation and engagement in seminar discussion; and 3) course essay.

Syllabus

Week One: General introduction of the course

Week Two: Pension policy in modern China

Week Three: Seminar: What are the roles of family and government in providing care and material supports for the elderly?

Week Four: Housing welfare policy in modern China

　　Guest *speaker: Dr. Yang Shen.* "Housing and intimate relationship in China"

Week Five: Seminar on housing policies in modern China

Week Six: Medical insurance system in modern China

　　Guest *speaker: Prof. Fang Fu (TBD).* "China's Doctor-patient conflicts and medical social worker's role in it"

Week Seven: Seminar: Do patients in your country trust doctors? What are the solutions to deal with the possible conflicts?

Week Eight: Social assistance policies in modern China

Week Nine: Seminar: "I feed you and you shut up" phenomenon in global countries

Week Ten: Gender and *Hukou* issues in modern China's social welfare policies

Week Eleven: Seminar: How does your welfare system treat the "outsiders"? Do you think it is generous or not? Why? Then how about China?

Week Twelve: Seminar: Are welfare policies in your country gendered? In which areas and how?

Week Thirteen: Community structure and the implementation of social welfare policies in modern China

Week Fourteen: Seminar: How does your government define community geographically? And, what is the role of community in providing welfare?

Week Fifteen NGOs and street-level bureaucrats in China's social welfare system

Guest *speaker: Ms. Cui Wang (TBD).* "Welfare for China's migrant children and what can a NGO do for it."

Week Sixteen: Seminar: Policies in documents are always not policies in practices. Why? To what extent the street-level bureaucrat / frontline workers should be responsible for this in the welfare policies area?

Syllabus-Two Thousand Years of Sino-foreign Cultural Exchanges

General Info
Instructor: Zhaoyang Zhang
Email: zzy001@sjtu.edu.cn
Course number: CL025
2 credits

Course Description
This course investigates cultural exchanges between China and the world during the past two thousand years. It will cover various topics, including the Silk Road trades, the receptions of Buddhism, Muslim and Christianity, the spread of Chinese inventions to the world, Admiral Zheng He's voyages from China to Africa during the 15th century and etc. The goal of this course is to demonstrate that even though pre-modern China was geographically isolated from the rest of Eurasia by mountains, deserts and oceans, Chinese civilization managed to engage in important cultural exchanges with other major civilizations via land and ocean routes, and that had significant impacts both to the development of China and the world.

This Course encourages students to understand the past by examining artifacts. Therefore, the instructor will organize a field trip for the class to visit Shanghai Museum.

Grading Policy
30% classroom performance, 70% final exam.

Schedule

Section 1: From the Origin to the Tang Dynasty

Week1: Geography of China/Chinese Writing System/Imperial System

Week 2: Relations between Qin-Han (221B.C.-A.D.220) and Xiongnu (Huns)

Week 3: The Fall of the Han Imperial Order and the Fragmentation of China

Week 4: The Rise of Sui-Tang (589-907) Cosmopolitanism

Week 5: Silk Road I-Trade and the Spread of Technology

Week 6: Silk Road II-Buddhism, Islam, Persian Religion and Arts

Section Three: Ming and Qing
Week 12: The Fall of Yuan and the Rise of Ming
Week 13: Admiral Zheng He's Voyages
Week 14: Field Trip
Week 15: The First Encounter with European West-Jesuits in Ming and Qing China
Week 16: Final Exam
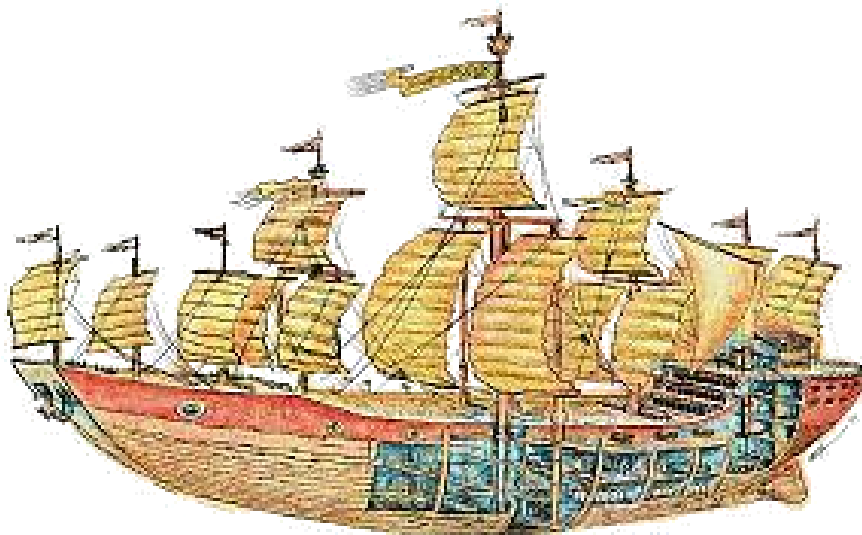
About the Instructor

Zhaoyang Zhang obtained his Ph.D. in history from University of California at Berkeley (2010) . He currently serves as a professor in the Department of History, School of Humanities, Shanghai Jiao Tong University. He has been teaching a variety of courses related to global history, Chinese history, Sino-foreign cultural exchanges. He has published about 40 articles in leading academic journals, plus a book.

Course Website

http://ecc.sjtu.edu.cn/html/course_170.html

Syllabus for STAT 6001 (Fundamental Mathematical Statistics)

Professor James Fullwood

Lecturer Information

Name: James Fullwood
Office Address: Science Building 6, room 627 (Minhang Campus)
Department: School of Mathematical Sciences
Email: fullwood@sjtu.edu.cn
Website: math.sjtu.edu.cn/faculty/fullwood

Class Meeting Times and Location
The class will meet on Wednesdays from 12:55-15:40, location to be determined.

Office Hours
Fridays, 12:30-14:00.

Reference Textbook
All of Statistics, A Concise Course in Statistical Inference by Larry Wasserman.

Topics
Probability spaces, random variables, cumulative distribution functions, mass/density functions, expectation, conditional expectation, multivariate distributions, convergence of random variables, weak law of large numbers, central limit theorem, estimation, confidence intervals, hypothesis testing, simple linear regression, stochastic processes and Shannon entropy.

Homework
Homework will be assigned after each lecture, which will always be due in class the following lecture.

Project
There will be a computer project assigned towards the end of the course. The project will be carried out in groups of no more than 4 students each.

Exams
There will be a mid-term exam and a cumulative final exam.

Grading

Project: 10%
Homework: 20%
Mid-Term Exam: 30%
Final Exam: 40%

SYLLABUS

Lie Groups and Lie Algebras

22 Feb 2022 to 11 Jun 2022
Mondays 8:00 a.m.- 10:45 a.m.
Week 1-16

By **Prof. Tudor Stefan Ratiu**

Chinese Government Friendship Award (2020)

Fellow of European Academy of Sciences (2019)

Shanghai Magnolia Memorial Award   (2018)

Tullio Levi-Civita for the Mathematical and Mechanical Sciences Award

American Mathematical Society Fellow (2012)

Russian Megagrant Winner (2011)

Credits: 3

Course Outline：

PART 1: Lie Algebras (8 topics, each taught for two weeks)

The four infinite series of classical simple complex Lie algebras

Nilpotent and solvable Lie algebras, fundamental theorems

Semisimple Lie algebras

Representation theory for SL(2,C)

Root space decomposition

Abstract root spaces and their properties

Weyl group, simple roots, order relation, Weyl chambers

Classification via Dynkin diagrams

PART 2: Lie Groups (8 topics, each taught for two weeks)

Review of basic calculus on manifolds. Definition of Lie groups. Examples.

The Lie algebra. The exponential map. The three adjoint actions

Baker-Campbell-Hausdorff, Lie's First Fundamental Theorem

Lie subgroups, Lie group homomorphisms, link to exponential map

Classification of connected Abelian Lie groups

Connected component of the identity. Simply connected Lie groups

Lie's Second Fundamental Theorem

Lie's Third Fundamental Theorem, informal discussion

ICCI Course Profile

Degree Program Name: Master of Management in Cultural and Creative Industry

Course Name: Management Practices in Cultural and Creative Industry
Course Code: JC26162
Course Credits: 1 credit
Course Category: ☐Required   ■Elective
Terms Offered: ☐Fall   ■Spring   (2022/23)

Course Schedule:

Section	Days	Start time	End time	Location
A	Thursday	8:55 AM	10:45 AM	TBA

Instructor: Dr. Sunghan RYU
- E-mail: shryu@sjtu.edu.cn
- Office room/hours: A8-418, Walk-in or by appointment*

* I have an open door policy for all students. For quick questions, feel free to contact me any time; I will do my best to respond within 24 hours for most cases. If you would like to meet in person, do not hesitate to e-mail me to make an appointment.

Teaching Assistant: TBC

Course Description:
The primary objective of this course is to provide students with an opportunity to become familiar with the problem solving phases in real management practices, specifically in cultural and creative industries. Effort will be placed on developing proficiencies in a range of skills required to 1) solve management issues, 2) prepare materials for communication, and 3) deliver the materials in effective ways. Students will also have an opportunity for participating in a short-term case writing and analysis project arranged by instructor, which requires students to use the knowledge and tools acquired in the related courses (including this course) and apply them in the assigned case.

This course is designed for students with the following conditions:
1) Interested in working on issues that cover a broad range of business issues in CCI
2) Comfortable with data collection from different sources and data-based analyses
3) Enjoy problem solving and willing to invest the time to be prepared for class
4) (Optional) Seeking a career in management consulting, corporate strategy, or product management

Course Goals:

Upon completing the course, the student should be able to:

1) Explain the phases of logical thinking and problem solving in a management practice

2) Demonstrate integration of strategic analysis, strategy formulation and strategy implementation in an organization.

3) Apply the tools of strategic and competitive analysis by analyzing a firm's industry and strategy and developing recommendations

4) Synthesize the knowledge gained in a variety of different and related courses to provide a professional consulting advice to focal organizations to solve a business problem

Textbooks:

1. Required Readings

1) Course Material: Distributed online

2) Reading Packet: Distributed online (or printed and distributed offline)

① McKinsey Special Collection: Business Strategy (Link: https://mck.co/2UrC7W4)

- The Strategic Yardstick You Can't Afford to Ignore (Jan 2014)

- Mastering the Building Blocks of Strategy (Oct 2013)

- Have You Tested Your Strategy Lately? (Jan 2011)

② Are You Solving the Right Problems, Harvard Business Review (Jan-Feb 2017) (Link: https://hbr.org/2017/01/are-you-solving-the-right-problems)

③ Visualizations That Really Work, Harvard Business Review (Jun 2016) (Link: https://hbr.org/2016/06/visualizations-that-really-work)

④ How to Make a Great Presentation, TED
(Link: https://www.ted.com/playlists/574/how_to_make_a_great_presentation)

2. Recommended Readings (Updating)

- Thinking Strategically, McKinsey Quarterly (Jun 2000) (Link: https://mck.co/31r5Wrj)

- Synthesis, Capabilities, and Overlooked Insights: Next frontiers for strategists, McKinsey Quarterly (Sep 2014) (Link: https://mck.co/2UrouGj)

- How to Master the Seven-Step Problem-Solving Process, McKinsey Podcast (Sep 2019) (Link: https://mck.co/2v6cuPQ)

- Want Better Strategies? Become a Bulletproof Problem Solver, McKinsey Podcast (Oct 2019) (Link: https://mck.co/2GXNNYw)

- Consulting Is More than Giving Advice, Harvard Business Review (Sep 1982) (Link: https://hbr.org/1982/09/consulting-is-more-than-giving-advice)

- Peter Block, Flawless Consulting: A Guide to Getting Your Expertise Used (3rd edition), Pfeiffer, 2011.

- HBR's 10 Must Reads: The Essentials. Harvard Business School Publishing, 2010.

- Bossidy, Larry & Charan, Ram, Execution: The Discipline of Getting Things Done. Crown Business Publishing, 2002.

- Ethan Rasiel and Paul Friga, The McKinsey Mind, McGraw-Hill, 2001.

- Scott Berinato, Good Charts: The HBR Guide to Making Smarter, More Persuasive Data Visualizations, Harvard Business Review Press, 2016.
- Chris Anderson, TED Talks: The Official TED Guide to Public Speaking, 2017.

Teaching Approaches:
This course consists of individual assignment, workshops, and group project, which all activities are interconnected under the "flipped learning" approach **(Appendix A)**. Detailed information on each teaching approach is presented in the following sections.

1. Individual Assignment
Students are required to carefully read the assigned reading material for each class and prepare one-page review. The review includes a brief summary of the material and own ideas/opinions/reflections on them. Based on the review, students are expected to actively join in-class discussions and workshop activities.

2. In-class Workshop
In the workshops, instructor will guide interactive discussion sessions based on each assigned reading material, from small group discussions to group presentations and open discussions. After the discussion sessions, students will participate in workshop activities designed by lecturer, according to the phases of problem solving in management practices.

3. Group Project – Business Case Writing and Analysis (Appendix B)
Students will form groups of 3 to 4 people. The reason for the group nature of this class is multifaceted – Each group will be writing a business case focusing on a company during the first 6 weeks; writing business cases is best conducted through extensive data collection (e.g., web search, interviews, news scraping), discussion, debate, and knowledge sharing.

The group project will be a hand-on experience on identifying and addressing real-world problems with an existing business. This will include each group develops a 3,000- to 5,000-word case before the 6th Week.

After finishing the first phase, each group will be assigned to one of the other groups' cases. Students are expected to analyze the cases based on the materials prepared by the other groups and prepare a 15-minute presentation with slides in the 8th Week (Final Week). In addition to the case analysis presentation, each group will give feedback on the assigned case regarding how to improve the cases.

Grading Policy:
As ICCI does not have a mandated curve or hard target for the distribution of grades for individual assignments or the course as a whole, students of this course should be given the grade they deserve based on their performance. Please refer to the following SJTU Graduate Grading Scale.

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
GPA	4.0	4.0	3.7	3.3	3.0	2.7	2.3	2.0	1.7	1.0	0
Percentage	95~100	90~94	85~89	82~84	78~81	75~77	71~74	67~70	63~66	60~62	<60

Evaluation items	Points	% of Grade
Group project – Case Writing	40	40.0%
Group project – Case Analysis	20	20.0%
Group project – Case Feedback	10	10.0%
Individual assignments	20	20.0%
Class participation	10	10.0%
Total	100	100.0%

※ Academic Integrity:

Business professionals must be trusted, because they may have access to a wide variety of confidential and private information. Everyone is expected to maintain the highest degree of ethical standards when taking exams or doing assignments. If you are involved in cheating or plagiarism on an exam, or assignment, you will LOSE WHOLE POINTS for the exam or assignment and be reported to an appropriate university committee or authority.

Assessment of Assignments:

1. Group Project Deliverables (70%)

The group project includes the following two elements:

1) Case Writing (Draft: 10% & Final: 30%)

Writing case is the most important component of the group project. Each case should contain the focal company's overview, industry background, competitive landscapes, current situations (i.e., symptoms), and so on. The cases will describe the company's story in detail and be heavily data driven. The cases is expected to be a professional piece of work, presented clearly and concisely, free of grammatical, spelling or syntax-related errors. Each group is expected to revise and resubmit the case after addressing feedback from the instructor and assigned group. The final version of case may be submitted to a case writing competition under the instructor's supervision. Best cases can be adopted for the case study activity of <Management Essentials> course in the coming semesters. Written cases will be graded by both instructor (70%) and the assigned group (30%).

2) Case Analysis (20%) & Feedback (10%)

Each written case will be assigned to another group. The *student groups* are responsible for analyzing the cases according to the case instructions prepared by the case writing groups. Every group will prepare 15-minute presentations with slides based on the analysis in the 9th Week. All team members are expected to participate evenly in the presentation. Case reports and presentations will be graded by both instructor (70%) and the case writing group (30%).

In addition to the case presentation, *individual students* of each group will submit 1-page feedback for improving the assigned case. The feedback may be related to the scope and objective of the case, corrections of misinformation, missing data, grammatical error, typo, and so on. Feedback report will be solely graded by instructor.

2. One Page Review for Reading Material (20%) (Appendix D)
Students will be also graded on four one-page reviews (5% each) in total for the reading materials. This review is an opportunity to provide your own perspective on a reading material. It is also the only individual assignment during the term. Please ensure the review is original and brings in new insights to class.

3. Class Participation (10%)
In workshops and other activities, students are expected to actively engage in questions and answers. Regular class attendance is REQUIRED per university policy. If any students miss a class, it is their responsibility to obtain information from a fellow student.

Additional Policy:

1. Canvas, WeChat, and Email as official means of communication: For effective communications, all students are expected to follow every updates in the course page at Canvas, the course WeChat group, and/or SJTU email. Each student must regularly check out those official means to notice the updates delivered by instructor or teaching assistant.

2. Class preparation: All students are expected to be prepared for class. Each student is responsible for all materials covered and assignments made in class and the instructor will make no special efforts on behalf of those who voluntarily miss classes. All students are encouraged to contribute toward the success of the course by sharing their knowledge and opinions in class, including bringing pertinent materials and experience to the attention of the instructor and the class. Students will also be called to answer questions and discuss problems.

3. Attendance: Regular attendance is REQUIRED per university policy. You will be expected to arrive in time and to remain in class until the end. If you must arrive late or leave early, please inform me or the TA beforehand. You have to provide the proof of a legitimate excuse (e.g. doctor's note). Late arrivals and early departures as well as missing classes without notification will negatively influence your class participation mark. Specifically, if you want to leave class early due to a legitimate reason, please select a seat so that you will minimally disrupt the class.

4. Meeting behavior: A repeatedly disruptive student will have his or her grade reduced. Side conversations during lectures or when another student is speaking are to be kept to a minimum. The exception to this expectation is when students are working in teams. This practice will keep the class moving along at a faster pace.

5. Late submission: All assignments, including group projects, must be completed and submitted according to the instructions provided. Hardware failure or inaccessibility is not a valid excuse for late work. You will not be excused from handing in an assignment on time.

6. Responsibilities of students: It is your responsibility to make sure you are staying with the course undergoing. If you must miss a class, it is your responsibility to recover any missed materials with your classmates. There will be NO "MAKEUPS" for any work missed without a legitimate excuse. All assignments and projects must be completed and submitted according to the instructions provided. Failure to follow instructions may result in a reduced grade.

7. Changes in the syllabus: The lecturer reserves the right to improve the materials and requirements as the semester unfolds, with sufficient warning concerning assessments, exams, and assignments.

8. Special needs: If you have any special learning or testing requirements please let me know as soon as possible so special arrangements can be made. If you have any special medical condition that you feel it would be helpful for me to know about, please let me know.

Course Calendar (Tentative):

Week	Topics / Activities	Assignment Due	Readings
Week 1 **Feb 16**	Course Introduction Introduction to Case Writing	Group formation for case writing and analysis	
Week 2 **Feb 23**	[Workshop 1] Strategical Thinking and Problem Solving	One page review 1 Case research plan submission	R1
Week 3 **Mar 2**	[Workshop 2] Analyzing and Framing Problems	One page review 2	R2
Week 4 **Mar 9**	[Workshop 3] Data Gathering Methods & Visualization	One page review 3	R3
Week 5 **Mar 16**	[Workshop 4] Preparing a Presentation Material	One page review 4	R4
Week 6 **Mar 23**	Case Presentation (Case Writing)	Initial case submission 1st individual group meeting	
Week 7 **Mar 30**	Case Analysis (No class)	Case assignment	
Week 8 **Apr 6**	Final Presentation (Case Analysis)	2nd individual group meeting Case report/feedback	
		Final case submission (Due Date: Apr 21)	

(Note: Course schedule maybe revised prior and during the course.)

Appendix A. Flipped Learning Overview

What is "Flipped Learning"?[1]

Flipped learning is a pedagogical approach in which the conventional notion of classroom-based learning is inverted, so that students are introduced to the learning material before class, with classroom time then being used to deepen understanding through discussion with peers and problem-solving activities facilitated by teachers.

By providing students with the material to gain a basic level of knowledge and understanding before class, classroom time can be used to deepen learning and develop higher-level cognitive skills. One of the core objectives of flipped learning is to move students away from passive learning and towards active learning where students engage in collaborative activity, peer learning and problem-based learning. Within this context, the role of the teacher shifts towards that of facilitator and coach by empowering students to take control of their own learning.

* More resources
- https://flippedlearning.org
- https://facultyinnovate.utexas.edu/flipped-classroom

Flipped Learning in <Management Practices>

1. Before class (3 hours at least):
- Students: Individual learning by reading distributed materials and supplements, writing 1 page reflections (including a short summary and your own opinions on the topics)
- Teacher: Prepare the key questions/topics (3 or 4 per class) and practice (workshop) materials

2. During class (80 mins):
1) Discussion: Small group (10 mins) → Presentation (10 mins) → Open discussion (20 mins)
2) Practice (workshop, 30 mins): Individual and/or group activities
3) Wrap-up (10 mins): Discussing lessons learned and new thoughts

3. After class (2 hours at least):
1) Applying lessons learned and practices to the group project
2) Sharing the applied knowledge and further materials to the class (if any)

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[1] https://www.heacademy.ac.uk/knowledge-hub/flipped-learning-0

Appendix B. Instruction for Business Case Writing

1. An aggressive schedule for writing a case (8 weeks in total)

Preparation and outline: 1 week
Data collection (e.g., web search, interviews): 2 weeks
Draft writing: 3 weeks
Review and revision: 2 weeks

1) Preparation
: Develop a case theme and data collection plan. Identify the central theme of the case: Each case must have a definite teaching purpose in mind. Three common themes are 1) a particular player in an interesting situation, 2) a key decision, or 3) a specific organizational problem or issue. If situations are allowed, make a plan for the course of the interviews. Use the attached form for a case research plan (Appendix C).

2) Data collection
: To prepare an industry and company overview, review the annual reports of the firm. Conduct a library search of articles in the business press about the firm. Compile a view of the industry from public resources. For interviews, develop an interviewee list, interview guide, and questions list. If interviews are not possible, refer to those interview articles conducted by the business media.

3) Draft writing
: Go through all the materials from the data collection phase and highlight key contents, such as interesting themes and issues, attractive exhibits, and a potential good opening. General cast structure follows the sequence: Opening section → Background information → Area of interest → Problem/issue → Closing section.

a) Opening section: Examples of key information
- The decision maker's name
- His/her position
- The company or organizations name
- The date, which can either be general (e.g., spring 2020) or it can be the exact data
- The firm's location and type of business
- The statement of the problem or trigger

b) Case body: Background information, area of interest, problem/issue
- Start case with general information such as industry background
- As the case progresses, it becomes narrower in focus with material about a specific area of interest, such as company
- Then include the problem or events leading into problematic situation

c) Closing section

- It should draw the reader back to the issues at hand. It should present case issue, trigger, or situation form the first section, but stated in a different manner

Three common frameworks for case writing include;
a) Chronology: Where we were; where we are now; where we need to go
b) Organizational structure: Describe the situation by moving thought the key blocks in the organization chart
c) Problem structure: Lay out the problem as the company sees it, then work through the alternatives or different positions on what should be done.

4) Review and revision
: Review the draft form focus, clarity, completeness, and conciseness. Evaluate the case material in view of three criteria

a) Did the material create involvement?
b) Did it create constructive conflict?
c) Did it accomplish the pedagogical objectives?

Circulate the draft to stakeholders including the contact person in the company and experts on the industry or company. The purpose of the review process is to get the fact right and make sure all the content is well organized. If receiving any comment and feedback, decide whether to accept and revise the relevant part accordingly.

* An effective business case has the following attributes:
- Ambiguous
- Full of conflict
- Leaves important issues unresolved
- Complex to allow multiple levels of analysis
- Introduces a tension between alternative courses of action
- End with more questions than answers
- Forces a decision

* More resources
- https://www.thecasecentre.org/educators/casemethod/resources/writingcases
- http://www.chinacases.org/index.jsp?lang=en-US

References
- Yemen, Gerry (2012), Overview of the Business Case Writing Process. Darden Case No. UVA-PHA-0065.
- Linder, Jane (1994), Writing Cases: Tips and Pointers, Harvard Business School Press. Product #: 391026-PDF-ENG.
- Shapiro, Benson P. (1986), Hints for Casewriting, Harvard Business School Press. Product #: 587052-PDF-ENG.

Appendix C. Case Research Plan Form

Case Objective or Focus: _____

_____

1. Background Information:

- Industry

- History

2. Area interest:

- Current company status

- Protagonist(s) background/influence

3. Specific issue/problem:

- The heart of the case

- Information surrounding decision(s) to be made

4. Exhibit material

Appendix D. One-Page Review and Discussion Instruction

Students are required to carefully read the assigned reading material for each class and prepare one-page review. The review includes a brief summary of the materials and own ideas/opinions/reflections on them. Every review should be submitted to the assignment board in the Canvas course page before each assigned class. Students are also expected to prepare the review and bring it to the online class. Based on the review, students are expected to actively join the in-class discussion and out-of-class discussion in the discussion board on the Canvas course page. Sequence of discussion for each class is as follow:

Program	Time	Remarks
1. Introduction	2 minutes	Instructor will give a brief introduction of the reading material and guidelines for discussion.
2. Small group discussion	10 minutes	3 to 4 persons will form a group and choose discussion topics on the reading material. A discussion leader manages the process, from discussion topic choice to leading discussion.
3. Presentation	10 minutes	One student of each group, other than the discussion leader, will present the summary of discussion in 2 minutes.
4. Open discussion	15 minutes	Based on the small group discussion and presentation, instructor will initiate some topics for the whole class discussion.
5. Wrap up	3 minutes	Instructor will summarize the whole discussions and suggest key takeaways.

For each class, please prepare the one-page review and discussion with considering the questions below. But, the question lists are only for references. Any own perspective and focus are more than welcome.

Reading Material #1. McKinsey Special Collection: Business Strategy
1. Why is it important to strategically choose an industry to compete? What are the roles of business strategy in finding an opportunity?
2. What are the building blocks of strategy and how they could help companies make strategic choices and carry them through to operational reality?
3. Among "the ten tests of a good strategy," what are the most important tests from your perspective? Why do you think so?

Reading Material #2. Are You Solving the Right Problems?
1. Do you think problem definition is more important than problem solving? If so (or not), why do you think so?
2. Why reframing for a company's problem can help it find better solution(s)?

3. How can companies (or other stakeholders) can reframe problem(s) in more effective ways?

Reading Material #3. Visualizations That Really Work

1. What are important components (or activities) of visual communication skills?

2. How data visualization processes can differ by nature and purpose of your works (i.e., four types of visual communication)?

3. How we can generate best (or better) outcomes (e.g., change mind, cause actions) through data visualization?

Reading Material #4. How to Make a Great Presentation

1. What are common aspects/structures of successful presentations/talks according to those TED talks?

2. What makes a presentation that people don't want to listen to? What does more matter, between presenters and materials?

3. Among the list of presentations, what is the most attractive presentation from your perspective? Why?

course code: LAW6326
Course name: Health Law in China
Credits: 2
Teaching Hours: 32 hours
Teacher: Jiajia YU
Course Description:

Health law in China is an interdisciplinary course which aims to establish connections between laws and medicine, the pharmaceutical industry, biotechnology and public health. It involves a complex network of regulations governing medical services, informed consent, doctor-assisted suicide, organ transplantation, assisted reproduction, infectious diseases, health insurance, digital healthcare, and pharmaceutical industry.

To solve legal issues in healthcare, one branch of law like tort law, criminal law or administrative law is not enough. The integrated application of multiple laws is a must. For students, it means challenges and also a chance to learn one and then master more than one.

Course Syllabus:
1.general description of health law in China
2.medical malpractice
3.informed consent
4.euthanasia and doctor-assisted suicide
5.organ transplantation
6.legal status of the fetus and legal protection
7.assisted reproductive technology (ART)
8.regenerative medicine and laboratory studies
9.regulatory compliance in digital health
10.communicable diseases control
11.improper marketing and corruption in the sector of healthcare
12. fraud in the sector of healthcare

Assessment format:

The students submit an assessment report at the end of the semester. The following requirements should be met:

(1) Topic and Content: the students select one from the topics listed in the course syllabus, introduce its counterpart legal system in a foreign country and then compare it to Chinese laws.

(2) The language: English

(3) The length: 4000-6000 words (citation is included)

(4) Citation: footnote