
AI theoretical basis and MindSpore development practice

Course route

1	Basic theories of AI	
	Theory、Practice	4h

2	Image processing	
	Theory、Practice	4h

3	Natural language processing	
	Theory、Practice	4h

4	Advanced method	
	Theory、Practice	4h

Course-specific Restrictions

Students majoring in computer, artificial intelligence, information and other related majors.

Prerequisite courses

- Python

Experiment environment

- Windows64 OS

Course objectives

- Understand the development history, basic methods and theories of artificial intelligence
- Comprehend the AI open source framework mindspire architecture
- Master the method and practice of image processing
- Mastering natural language processing methods and practices
- Master advanced artificial intelligence methods such as transfer learning and reinforcement learning
- Master MindSpore Lite application development method

Course content

AI basic

- Basic theories of AI
- Deep learning theory
- AI open source framework-MindSpore

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- Practice 1: MindSpore basic operation
 - Practice 2: Iris classification

Image processing

- Image pre-processing
- Convolutional neural network
- Image classification
- Practice 3: MindSpore advanced operation
- Practice 4: cifar10 classification experiment

Natural language processing

- Basic theories of NLP
- NLP algorithm
- Practice 5: MindSpore RNN classification
- Practice 6: Sentimental classification

Advanced method

- Basic theories of Transfer learning
- MindSpore Lite

- Practice 7: MindSpore Lite basic operation
- Practice 8: Face mapping

Course duration

16h

AI theoretical basis and MindSpore development practice

No.	Date	Time	Curriculum		Method	Teacher	Place
1	Day1	4h	Basic theories of AI	Basic theories of AI Deep learning theory AI open source framework-MindSpore Practice 1: MindSpore basic operation Practice 2: Iris classification	Theory+Practice		
2	Day2	4h	Image processing	Image pre-processing Convolutional neural network Image classification Practice 3: MindSpore advanced operation Practice 4: cifar10 classification experiment			

3	Day3	4h	Natural language processing	Basic theories of NLP NLP algorithm Practice 5: MindSpore RNN classification Practice 6: Sentimental classification			
4	Day4	4h	Advanced method	Basic theories of Transfer learning MindSpore Lite Practice 7: MindSpore Lite basic operation Practice 8: Face mapping			

AE8104 Finite Element Analysis of Composites (3 credits)

Fall 2022

Class time: TBD, East Middle Hall 4-301

<https://oc.sjtu.edu.cn/courses/36842>

Course objective:

This course aims at providing fundamental and practical notions in finite element analysis. The course will present systematic approaches for the derivation of various finite elements. The students will also be introduced to numerical techniques for the solution of the discretized governing equations. Practical aspects such as mesh generation and choice related to numerical integration will also be presented. This course will mostly be based on structural analysis, focusing on both isotropic and composite materials. Students need to program their own FE code to accomplish homework and final project.

Instructors:

Yile Hu yilehu@sjtu.edu.cn office A430 <mailto:yilehu@email.arizona.edu>

TA:

Jiaming Liang liangjiaming_6@sjtu.edu.cn
Dahua Hao haodahua@sjtu.edu.cn

Office Hours:

To be determined.

Textbook:

1. Class Notes;
2. Finite Element Analysis of Composite Materials, Ever J. Barbero;
3. The Finite Element Method: Its Basis & Fundamentals 7th Edition, O.C.Zienkiewicz.

Prerequisites:

Student should have previous knowledge or currently registered to courses: Solid Mechanics, Mechanics of Composites, Linear Algebra, and Numerical analysis. Moreover, this course requires some programming knowledge with C/C++, FORTRAN, Java, Python or any other computer language you prefer. Matlab is not recommended for graduate students.

Grade Policy:

Letter grade's policy is subjected to SJTU policy:

A+ [95, 100], A [90, 95), A- [85, 90);
B+ [82, 85), B [78, 82), B- [75, 78);
C+ [71, 75), C [67, 71), C- [63, 67);
D [60, 63), F [0, 60).

Homework 30%, Quiz 10% (two quiz), Midterm exam 30%, Final exam 30%.

Class Policy:

1. Class attendance is **mandatory**. If a student is absent, proper documented justification is **required**;

2. All holidays or special events observed by organized religious will be honored for those students who show affiliation with that particular religion;
3. Professional behavior is expected in this course. Cell phone, laptop and tablet should be turned off unless for class needed.

Policies against plagiarism:

1. Homework and final project: if there is evidence that a student has copied some solution material (from another student and/or a manual), grade zero will be assigned to this particular homework (project);
2. Midterm exam and quiz: If a student is caught taking information or passing information from or to another student during an exam, grade zero will be assigned to the exam (quiz).

Students with Disabilities:

If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is important that you notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

Class Agenda (Tentative):

Week	Content	Dates
1	Syllabus Chapter I. Introduction Chapter II. Construction of FE equations <ul style="list-style-type: none"> - Minimization of potential energy; - Rayleigh-Ritz method; 	Sept 24
2	<ul style="list-style-type: none"> - Galerkin method; - Variational approach. Chapter III. One-Dimensional Problem 3.1. 2-noded truss element <ul style="list-style-type: none"> - Shape functions; 	Oct 8
3	<ul style="list-style-type: none"> - Coordinate transformation; - Assemble global stiffness matrix; - Boundary conditions; - Reduced stiffness matrix; - Calculate nodal and elemental variables. 	Oct 15
4	3.2. 3-noded truss element <ul style="list-style-type: none"> - Elemental stiffness matrix; - Coordinate transformation. 3.3. Multi-Point Constraints (MPC)	Oct 22
5	Quiz Chapter IV. Two-Dimensional Problem 4.1. Constant Strain Triangle (CST) element <ul style="list-style-type: none"> - Parent coordinate system; - Approximated solution; - Shape function; - Jacobian matrix; - Elemental stiffness matrix; - Equivalent nodal force. 	Oct 29
6	4.2. Bilinear quadrilateral element <ul style="list-style-type: none"> - Parent coordinate system; - Approximated solution; - Shape function; - Elemental stiffness matrix; - Numerical integration; - Equivalent nodal force; - Stress and strain extraction. 	Nov 5
7	4.3. Shear locking and hourglass mode 4.4. Pascal's triangle 4.5. Quadratic triangle element 4.6. Quadratic quadrilateral element 4.7. 9-noded quadrilateral element 4.8. Axisymmetric Problem	Nov 12
8	Chapter V. Three-Dimensional Problem 5.1. 4-noded tetrahedral element 5.2. 10-noded tetrahedral element 5.3. 8-noded hexahedral element <ul style="list-style-type: none"> - Selectively Reduced Integration (SRI); - Equivalent nodal force. 5.4. 20-noded hexahedral element <ul style="list-style-type: none"> - 14-Points Rule (14PR); - Equivalent nodal force. 	Nov 19
9	Midterm exam	TBD

10	Chapter VI. Solution Technique 6.1. Gauss elimination 6.2. LU decomposition 6.3. LDL^T decomposition 6.4. Conjugate Gradient method <ul style="list-style-type: none"> - CG algorithm; - Preconditioned CG algorithm; - Choice of preconditioner. 6.5. Generalized Minimal Residual method <ul style="list-style-type: none"> - Krylov subspace; - GMRes algorithm; - Preconditioned GMRes algorithm. 6.6. Convergence analysis	Nov 26
11	Chapter VII. Structural Element 7.1. Euler-Bernoulli beam element <ul style="list-style-type: none"> - Beam theory; - Governing equation; - Galerkin's method; - Shape function; - Elemental stiffness matrix; - Coordinate transformation; - Equivalent nodal force. 	Dec 3
12	7.2. Timoshenko beam element <ul style="list-style-type: none"> - Shape function; - Elemental stiffness matrix. 7.3. Nonconforming plate element <ul style="list-style-type: none"> - Plate theory; - C₁ continuity; - Shape function; - Elemental stiffness matrix; - Equivalent nodal force. 	Dec 10
13	7.4. Conforming plate element <ul style="list-style-type: none"> - Shape function; - Elemental stiffness matrix; - Equivalent nodal force; - Mixed interpolation for transverse shear strains. 	Dec 17
14	Quiz Chapter VIII. Modeling Macromechanical Structures of Composites 8.1. Modeling composite laminate with shell element 8.2. Modeling composite laminate with solid element 8.3. Failure criteria and continuum damage mechanics	Dec 24
15	Chapter IX. Modeling Micromechanical Structures of Composites 9.1. Continuous fiber reinforced composites 9.2. Short fiber reinforced composites	Dec 31
16	Chapter X. Dynamic and Buckling Analyses 10.1. Linear buckling analysis 10.2. Derivation of mass matrices 10.3. Computation of eigenvalues and mode shapes	Jan 7

Fundamentals of Materials Science

By

Prof. Qiang Guo, Prof. Kolan M. Reddy, Prof. Jing Liu, Shanghai Jiao Tong University

“Fundamentals of Materials Science” is one of the core modules for university/college students in the discipline of materials and metallurgy. In this course that contain 68 recorded lectures, the focus is on the internal relationships among the processing, microstructure, properties and performance for three different types of materials: metals, ceramic and polymer physics. The course provides guidance for materials design and application and lays a solid theoretical foundation for subsequent courses, including the Thermodynamics of Materials, Kinetics of Materials, Mechanical and Functional Properties of Materials, and etc. The pre-recorded mini-lecture series will be complemented by synchronous tutorials and Q & A sessions.

The following are the contents of the course.

1. Introduction. 1 lecture
2. Atomic bonding and crystal structure. 8 lectures
3. Crystal defects. 9 lectures
4. Mechanical properties. 13 lectures.
5. Recovery and recrystallization. 4 lectures.
6. Diffusion. 8 lectures.
7. Phase diagrams. 16 lectures.
8. Phase transformations. 9 lectures.



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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, 4th 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	
Xiaoqing 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



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

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.

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

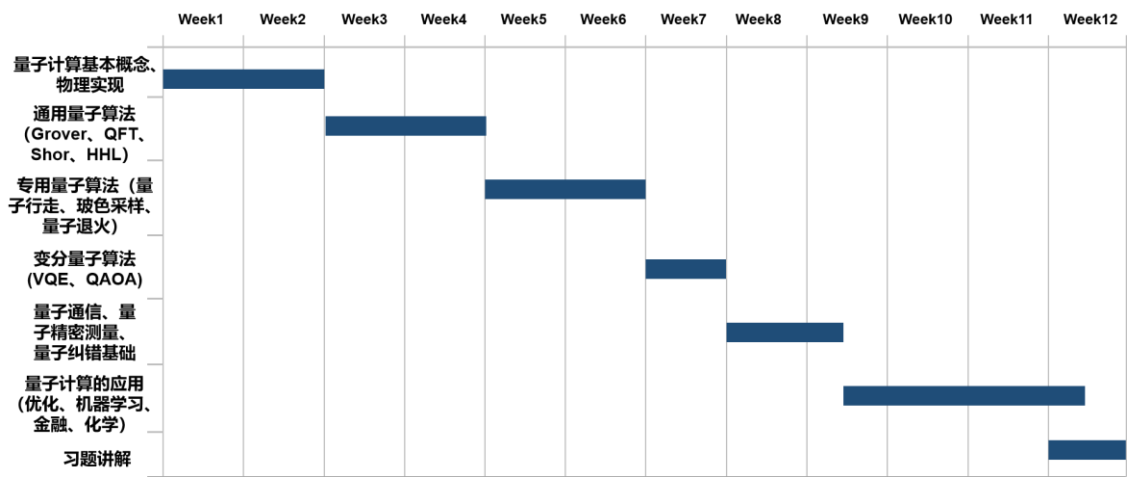
week	Day	Date	Tentative Lecture Topics	Assignment	Due
1	Tue	09-14	Class Introduction; Chapters 1 and 2		
	Thurs	09-16	Chapter 3	HMWK01	
	Fri	09-17	Chapter 4		
2	Tue	09-21	Moon Festival (No Class)		
	Thurs	09-23	Chapter 5		
	Fri	09-24	Chapter 6	HMWK02	HMWK01
3	Tue	09-28	Chapter 7a		
	Thurs	09-30	Chapter 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)		

《量子信息技术及实践》课程教学大纲

课程基本信息（Course Information）					
课程代码 （Course Code）	MS331+MS333	*学时 （Credit Hours）	64	*学分 （Credits）	4
*课程名称 （Course Name）	量子信息技术及实践				
	Quantum Information Technologies and a Practical Module				
课程性质 (Course Type)	本科生核心课程				
授课对象 （Audience）	致远学院本科生、交◦通全球课堂本科生				
授课语言 (Language of Instruction)	全英文授课				
*开课院系 （School）	致远学院、物理与天文学院				
先修课程 （Prerequisite）	线性代数、量子力学				
授课教师 （Instructor）	唐豪、金贤敏		课程网址 (Course Webpage)	https://global.sjtu.edu.cn/en/page/sub/215	
*课程简介 （Description）	<p>本课程包含 3 学分的教学课程和 1 学分的实践课程。3 学分教学课中将讲授量子信息和量子计算的基本原理、算法介绍和前沿动态，强调实战化演练和面向应用场景的量子算法展现，使学生掌握扎实的量子信息实战技术。通过本课程的学习，学生将理解计算复杂度基本概念及量子计算与经典计算的实质区别；了解光子、超导体、离子阱等不同量子计算物理体系的特点和区别；学习量子逻辑门的物理实现和矩阵表示，掌握各种量子逻辑门的相互推导转换；掌握 Deutsche 算法、Grover 算法、Shor 算法、量子傅利叶转换等基础算法的量子线路构建，并结合在线量子云平台操作展示；理解玻色采样、量子行走等专用量子算法，学习专用光量子计算、伊辛模型机、量子退火模拟器等常见专用量子计算途径的原理和物理实现；掌握目前中等有噪声量子时代常用的 VQE、QAOA 等量子-经典混合变分量子计算；学习量子机器学习、量子优化、量子化学等面向应用场景的新兴交叉方向的量子信息原理和量子算法设计。</p> <p>1 学分实践模块基于课程对量子计算基本原理及量子算法的量子逻辑线路构建等知识，进一步锻炼学生运用量子云平台构建演示量子算法的实践能力。学生将自主实战操作量子云平台，面向图像分类、飞行机设计、蛋白质折叠、金融投资优化等特定的应用场景需求，灵活选择合适的量子计算途径和算法，通过构建量子线路实现算法，并对计算结果进行分析，理解量子算法对于解决特定优化问题的应用以及量子算法的加速优势。</p>				

<p>*课程简介 (Description)</p>	<p>This course would cover the fundamental principles, algorithm designs and frontier progresses on quantum information and quantum computing, with an emphasis on the practical skills and visions for application-oriented quantum information technologies.</p> <p>Through this course, the students are expected to:</p> <ul style="list-style-type: none"> ✓ Understand fundamental concepts for computational complexity, and the essential difference between classical and quantum computing; ✓ Learn different physical platforms for quantum computing including photonics, superconductors, ion traps, etc; Understand the physical realization and matrix expressions for qubits and quantum gates. ✓ Master common universal quantum algorithms including Deutsche's algorithm, Grover's algorithm, Shor's algorithm, Quantum Fourier transform, and know how to implement quantum circuits on the online quantum cloud platform to demonstrate these algorithms. ✓ Learn analog quantum algorithms such as boson sampling and quantum walks, and understand the common analog quantum computing approaches including analog photonic quantum computing, Ising machine, and quantum annealer, etc. ✓ Know the hybrid quantum-classical algorithms such as VQE and QAOA that are being widely investigated as the Noisy Intermediate-Scale Quantum technologies. ✓ Learn the frontier progresses for the emerging field including quantum machine learning, quantum optimization, quantum chemistry and quantum finance, and how to design suitable quantum algorithms to address different applications. <p>The practical module follows up the course <i>Quantum Information Technologies</i>, and would further train the practical skills of using quantum computing cloud platforms to apply quantum algorithms for real-life cases. Students are expected to use platforms such as IBM quantum experience, D-Wave Ocean or Amazon Braket to form the quantum circuits for solving real problems such as pattern classification, protein folding and financial portfolio optimization, etc. The students can flexibly choose a suitable quantum algorithm and implement it in a suitable quantum computing cloud platform. By analyzing the quantum implementation and the computational results, the students are expected to gain deeper understanding of quantum algorithms for optimization applications and the speed-up advantages brought up by quantum algorithms.</p>
<p>课程教学大纲 (Course Syllabus)</p>	
<p>*学习目标 (Learning Outcomes)</p>	<ol style="list-style-type: none"> 1. 了解量子计算与经典计算的实质区别以及在不同量子物理体系的实验实现; 2. 实战灵活运用不同量子逻辑门构建量子线路, 实现特定用算法, 掌握扎实的物理知识与工科技能; 从而了解并认识工程与科学的关系(A3) 3. 对常用专用量子算法、专用量子计算途径、以及量子加速优势等常见量子信息重点关注问题, 对量子信息技术形成更全面的认识, 培养良好的科研全局观。 4. 学习量子机器学习、量子优化、量子化学等面向应用场景的新兴交叉方向的量子信息原理和量子算法设计, 培养多学科交叉的研究思维。

第 1-12 周内容安排:



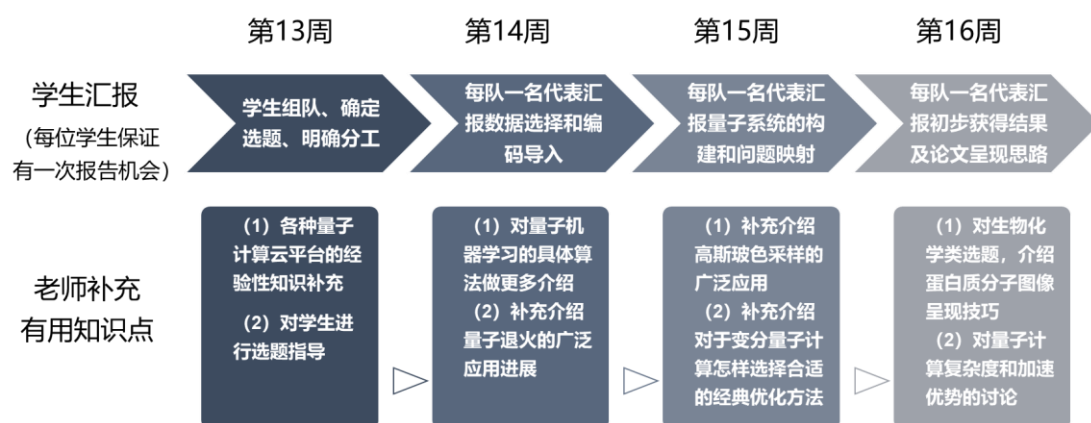
*教学内容、进度安排及要求
(Class Schedule & Requirements)

日期	周次	教学内容	学时	教学形式	作业及要求	基本要求	考查方式	对应课程目标
	1	Some fundamental introduction 1.1 An introduction to the course 1.2 Brief history of computers 1.3 Concepts for computational complexity, 1.4 Basics for qubit. Essential difference between classical and quantum computing; Reviewing related quantum mechanics 1.5 Realizing Qubits in different physical systems and their research progresses	4	课堂教学	文献阅读	阅读教程并理解概念	课堂提问	课程目标 1
	2	Quantum gates and quantum circuits (I) 3.1 The bloch sphere 3.2 Single qubit quantum gates 3.3 Two-qubit and multi-qubit quantum gates 3.4 Convert between CNOT and CZ gates 3.5 Quantum gates in different physical systems	4	课堂教学	习题	掌握推导方法	课堂提问	课程目标 2
	3	Universal quantum algorithms and their circuit designs (I) 3.1 Deutsch's algorithm	4	课堂教	习题	掌握公式推导	作业评分	课程目标 2

		3.2 Grover's search algorithm for 1 out of 4 3.3 Grover search for general scenarios 3.4 Introduce IBM Quantum Experience, QPanda and HiQ online quantum processors		学		及平台操作		
	4	Universal quantum algorithms and their circuit designs(II) 4.1 Quantum Fourier Transform 4.2 The Shor's algorithm 4.3 Application to phase estimation	4	课堂教学	习题	掌握公式推导及平台操作	作业评分	课程目标 1 和 2
	5	Universal quantum algorithms and their circuit designs(III) (new algorithms based on QFT) 5.1 HHL algorithm 5.2 Quantum SVM 5.3 Quantum PCA 5.4 Exercise class on previous knowledge	4	课堂教学	习题及文献阅读	理解概念	作业评分	课程目标 1 和目标 2
	6	Analog quantum computing algorithms (I) 6.1 quantum walks and quantum stochastic walks 6.2 Boson sampling 6.3 Gaussian boson sampling	4	课堂教学	文献阅读	理解概念	课堂提问	课程目标 1
	7	Analog quantum computing algorithms (II) 7.1 Quantum annealing and adiabatic quantum computing 7.2 Superconducting annealer and photonic Ising machine 7.3 Map QUBO optimization problems in quantum annealing	4	课堂教学	文献阅读及分析	理解概念	课堂提问	课程目标 3 和目标 4
	8	Hybrid variational quantum computing 8.1 The NISQ era 8.2 VQE algorithm 8.3 QAOA algorithm 8.4 theoretical and experimental progress	4	课堂教学	习题及文献阅读	理解概念	作业评分	课程目标 1 和目标 2
	9	A brief introduction on quantum communication and quantum	4	课堂	文献	理解概念	报告评分	课程目标

			metrology 9.1 Fundamental concepts for quantum communication 9.2 Quantum communication network: from air to sea. 9.3 Fundamental concepts and applications for quantum communication		教学及示范操作	阅读及分析			3
		10	Quantum computing for optimization & machine learning 10.1 An overview of optimization of different types 10.2 Solve one optimization task using different quantum approaches such as Grover, quantum annealing, QAOA, etc. 10.3 An overview of quantum ML in different types: supervising, unsupervising and reinforcement learning 10.4 The gradient in quantum circuit and parameter shift rule 10.5 Feature maps in quantum circuits and case studies	4	课堂教学	文献阅读分析	理解概念	课堂提问	课程目标3
		11	Quantum computing for finance 11.1 An overview of quantitative finance and quantum involvement 11.2 QAE algorithm for financial derivative pricing 11.3 Quantum annealing for asset portfolio optimization 11.4 Exercise class for previous knowlege	4	课堂教学示范操作	文献阅读及分析	理解概念	报告评分	课程目标3
		12	Quantum computation for chemistry and biology 12.1 The mapping between fermions and qubits 12.2 Variational quantum eigensolver for solving molecular ground energy 12.3 Extensions and experimental implementations 12.4 Quantum annealing for protein folding	4	课堂教学及示范操作	文献阅读及分析	理解概念	报告评分	课程目标3

第 13-16 周内容安排:



日期	周次	教学内容	学时	教学形式	作业及要求	基本要求	考查方式	对应课程目标
	13	Some fundamental introduction 1.1 The practical tips for using the quantum cloud platform 1.2 Tutorials on a few quantum machine learning algorithms e.g. QGAN, QAutoencoder, QCNN 1.3 Set up teams, Q&A and discussion	4	课堂教学	文献阅读	阅读教程并理解概念	课堂提问	课程目标 1-4
	14	Practical training 2.1 Each team reports on how to get the real data and how to load in quantum circuit 2.2 Q&A and discussion (Teacher and TA help with practical issues)	4	实践操作	文献阅读	理解方法	课堂提问	课程目标 1-4
	15	Practical training 3.1 Each team reports on Hamiltonian design for the task 3.2 Q&A and discussion (Teacher and TA help with practical issues)	4	实践操作	文献阅读	理解方法	课堂提问	课程目标 1-4
	16	Analysis and Discussion 4.1 Each team reports on the analysis of output results and how to present the work 4.2 Discuss quantum advantages in quantum algorithms 4.3 Q&A and discussion	4	课堂讨论及实践	文献阅读	理解方法	报告评分	课程目标 1-4

<p>*考核方式 (Grading)</p>	<p>(1) 日常表现 (30%)：课堂出勤、课堂回答问题及讨论分享等表现、课后作业。 Regular performance (30%): attendance, in-class performance and homework.</p> <p>(2) 课上口头报告 (20%)：在给定的题目中选择一个展开调研，做口头报告。 Oral talk (20%): Investigate a certain topic on quantum computing and make an oral talk on the topic in class.</p> <p>(3) 期末试卷 (25%)：根据课程知识点设计考卷答题，考核学生对于量子信息基本知识点和实用量子算法技术的理解。 Final exam paper (25%): The exam paper is designed according to the curriculum of the course, in order to assess students' understanding of the basic knowledge points of quantum information and practical quantum algorithm technology.</p> <p>(4) 实践报告 (25%)：针对特定的优化问题，基于量子云平台，运用所学知识演示尽可能高效优化的量子算法，分析量子线路和计算结果，并做书面报告。 Practical report (25%): The students are expected to demonstrate efficient quantum optimization algorithms for specific optimization problems using the quantum cloud platform. They would design quantum circuits, analyze the results, and write a formal report.</p>
<p>*教材或参考资料(Textbooks & Other Materials)</p>	<p>[1] Nielsen, M. A. and Chuang, I. L. <i>Quantum Computation and Quantum Information</i>. Cambridge University Press (2000).</p> <p>[2] Benenti, G., Giulio C., and Giuliano S. <i>Principles of quantum computation and information: Volume II: Basic Tools and Special Topics</i>. World Scientific Publishing Company (2007).</p> <p>[3] Wittek, P.. <i>Quantum machine learning: what quantum computing means to data mining</i>. Academic Press (2014).</p> <p>[4] IBM Quantum Experience Tutorial. Retrieved from: https://www.qiskit.org/documentation/index.html</p> <p>[5]Guo, G.P., Chen, Z. J., and Guo, G. C. <i>Introduction to Quantum Computing and Programming</i>. Science Press (2019).</p>
<p>其它 (More)</p>	
<p>备注 (Notes)</p>	

备注说明：

1. 带*内容为必填项。
2. 课程简介字数为 300-500 字；课程大纲以表述清楚教学安排为宜，字数不限。

SP166 Ocean Science

2021 Fall Semester

Course Instructor: [Prof. John Z. Shi](#)

Course Arrangement

Lecture I _Introduction to Ocean Science

Lecture II _History of Ocean Science

Lecture III _Earth Structure, Plate Tectonics and Ocean Basin

Lecture IV _Ocean Waters

Lecture V _Atmospherical Circulation

Lecture VI _Ocean Circulation

Lecture VII _Ocean Waves

Lecture VIII _Ocean Tides

Lecture IX _Life in the Ocean

Lecture X _Pelagic Communities

Lecture XI _Benthic Communities

Lecture XII _Uses and Abuses of the Ocean

ICE6202 Digital Image Processing

Course Teacher

Prof. Rui Zhang

Email: zhang_rui@sjtu.edu.cn

Lecture 1 Introduction

Lecture 2 Sampling & Reconstruction, Quantization, Radiometry
Fundamentals

Lecture 3 Colorimetry Fundamentals, Human Visual System,
Human Visual Models & Image
Quality Assessment

Lecture 4 2D DFT, DCT, WHT

Lecture 5 KLT, 2D DWT

Lecture 6 Gray Level Enhancement

Lecture 7 Image Filtering in Spatial Domain, Image Filtering in
Frequency Domain, Median
Filtering

Lecture 8 Image Restoration

Lecture 9 Image Reconstruction

Lecture 10 Theoretical Fundamentals of Image Compression

Lecture 11 Entropy Coding

Lecture 12 Predictive Coding, Transform Coding

Lecture 13 Edge Detection, Line Detection

Lecture 14 Region-Based Segmentation, Morphological Filtering

Lecture 15 Image Description

Lecture 16 Review

Textbook

Digital Image Processing (Third Edition), Rafael C. Gonzalez,

Richard E. Woods, 2017

Evaluation Criteria

Practice exercise 20%

Project reports 40%

Final exam 40%

MT319 Materials Physics

Course Information

Course Number: **MT319**

Course Name: **Materials Physics**

Course Hours: **64**

Course Credits: **4**

Prerequisites: Calculus, General Physics, Fundamental of Materials Science

Course Outcomes:

On the successful completion of this course, the student will be able to:

1. Have a general understanding in the description of a crystal.
2. Understand how electrons or electromagnetic waves are scattered by crystal lattice.
3. Know how the atoms are bonded to form crystals.
4. Understand how to describe the atom vibrations in crystals and the concept of phonons.
5. Understand how the atomic vibration modes affect the thermal properties of a crystal.
6. Understand the fundamental concepts of quantum mechanics as involved.
7. Understand what the classical description of the electrons states in metals is.
8. Understand the origin of energy bands for crystals.
9. Understand basic concepts of semiconductors.

Course Outline

SOLID-STATE PHYSICS (I)

1. Crystal Structure (4 hours)
 - 1.1 Introduction of the Course
 - 1.2 Periodic Array of Atoms
 - 1.3 Fundamental Types of Lattices
 - 1.4 Simple Crystal Structure
2. Wave Diffraction and the Reciprocal lattice (6 hours)
 - 2.1 Diffraction of Waves by Crystals
 - 2.2 Scattered Wave Amplitude
 - 2.3 Brillouin Zones
 - 2.4 Fourier Analysis of the Basis
3. Crystal Binding (4 hours)
 - 3.1 Crystals of Inert Gases
 - 3.2 Ionic Crystals
 - 3.3 Covalent Crystals
 - 3.4 Metals and Hydrogen Bonds
4. Crystal Vibrations (4 hours)
 - 4.1 Vibrations of Crystals with Monatomic Basis
 - 4.2 Two Atoms Per Primitive Basis
 - 4.3 Quantization of Elastic Waves

QUANTUM MECHANICS

1. The Wave Function (4 hours)
 - 1.1 The Schrodinger Equation
 - 1.2 The Statistical Interpretation
 - 1.3 Probability
 - 1.4 Normalization
 - 1.5 Momentum
 - 1.6 The uncertainty Principle
2. The Time-independent Schrodinger Equation (6 hours)
 - 2.1 Stationary States
 - 2.2 The Infinite Square Well
 - 2.3 The Harmonic Oscillator
 - 2.4 The Free Particle
 - 2.5 The Delta-Function Potential
 - 2.6 The finite Square Well

3. Formalism (8 hours)

3.1 Linear Algebra

3.2 Function Spaces,

3.3 The Generalized Statistical Interpretation

3.4 The Uncertainty Principle

4. Quantum Mechanics in Three Dimensions (2 hours)

4.1 Schrodinger Equation in Spherical Coordinates

4.2 The Hydrogen Atom

4.3 Angular Momentum

4.4 Spin

SOLID-STATE PHYSICS (II)

5. Thermal Properties (6 hours)

5.1 Phonon Heat Capacity

5.2 Anharmonic Crystal Interactions

5.3 Thermal Conductivity

6. Free Electron Fermi Gas (6 hours)

6.1 Energy Levels in One Dimension

6.2 Free Electron Gas in Three Dimensions

6.3 Electrical Conductivity and Ohm's Law

7. Energy Bands (8 hours)

7.1 Nearly Free Electron Model

7.2 Bloch Functions

7.3 Kronig-Penney Model

7.4 Wave Function of Electron in a Periodic Potential

8. Semiconductor Crystals (4 hours)

8.1 Band Gap

8.2 Equation of Motion

8.3 Intrinsic Carrier Concentration

8.4 Impurity Conductivity

Assessment:

1. Lecture Attendance (10%)

2. Homework (20%)

3. Final Examination (70%)

Textbook & References:

1. C. Kittel, *Introduction to Solid State Physics*. 8th edition, John (Wiley & Sons, Inc. 2005).
2. David J. Griffiths, *Introduction to Quantum Mechanics*, 2nd edition, (Pearson Prentice Hall, 2004).



Advanced Econometrics III: Time Series Analysis

Course Description:

This course focuses on the advanced methods and tools to analyze time series in finance and macroeconomics. The first part of the course introduces the foundation and building blocks for time series analysis, such as stationarity, nonstationarity, cointegration, impulse responses and shock identification etc.

The students are expected to understand ARMA, VAR, and other models as well as methods such as Spectral Analysis, GMM and Kalman Filter that are important tools in the time series analysis of macroeconomics and financial economics. More importantly, students are expected to be able to apply the methods and tools learned to set up appropriate empirical models to analyze the problem in macroeconomics and financial economics, and to estimate and test these models.

In the second part of the course, various macro-asset pricing models are introduced and the students are expected to understand the empirical tests of implication of these asset pricing model, both time-series and cross-section tests.

The prerequisite for this course is intermediate-level courses in finance and macroeconomics and econometrics (for example, Econometrics Analysis by William Greene).

Course Code:

In this semester, this course is a hybrid course offered to graduate students and senior undergraduate students, offline and online, via Tencent Meeting in the [Global Virtual Classroom Shanghai Jiao Tong University](#) and [Virtual Exchange Program of the APRU](#) (Association of Pacific Rim Universities)

Course code for undergraduate students: EC347

Course code for graduate students: ECON9004

Time and Location:

- Time: Fridays 14:00-16:45
- Location: 新上院S204
- Virtual Classroom: Tencent Meeting

NOTE:

1. This course is offered to registered students only. Please do **not share** any course material (Tencent Meeting information, lecture notes, homework, references, wechat group code and etc) without my permission. Unauthorized sharing/copying might result in failing or being banned from the course.
2. Students in SJTU are required to attend the class in the classroom (offline).

Contact Information:

- The most efficient way to contact me is by email, and I will usually reply in 24 hours. Office hour is available by appointment. My email address is nanli@sjtu.edu.cn My office is in Antai College of Economics and Management, B705.
- Join the course wechat group by scanning the QR code

Note:

1. Please change your group Nickname to

"real name" + University + PhD/MA/Undergraduate + Year.



2. Please do not post anything in this group irrelevant to this course. I will kick out and ban anyone who violates this rule without warning.

- Course Website: Canvas, <https://oc.sjtu.edu.cn>
- Personal Website: <https://www.acem.sjtu.edu.cn/en/faculty/linan.html>

Homework/Grading

There will be homework, final exam, and group project. The final grade is based on the weighted average of the homework, online practice competition, group project and final exam grades. The following weighting schemes will determine your final grade for the course:

- Homework: 20%
- Group Project: 30%
- Class Participation: 10%
- Final Exam: 40%

Homework is *individual task*, you are encouraged to discuss homework in groups, but each one of you must **complete homework on your own** and hand in a copy of homework separately. For empirical parts of the homework, do NOT submit your program codes or raw data, please submit the final results of your computation with explanation. No late submission of homework will be accepted.

Warning:

- *Plagiarism is taken very seriously. Students had been caught plagiarizing in homework, term paper, and/or quizzes in this course have been severely penalized. Any student caught cheating in any homework, term paper, and/or exams will be failed in this course and reported to the school for further penalty.*
- *If a student is absent from the exam or late for more than 30 minutes without any medical certificate or other verifiable excuses (subject to the approval of lecturer), there will be no make-up exam and the grade will be counted as zero.*

Group Project:

You are required to form a group of **no more 5** students. Each group must sign up to do a 30-minute class presentation and write a report of your group project. You should submit your presentation slides at CANVAS at least 12 hours before the presentation. In addition, a report is due by the end of the semester. The report should be no more than 10 pages with at least 11pt Time New Roman Font and 1.5 line spacing.

- ***For Ph.D. students:***

Your group should write **a referee report** and give a 30-minutes presentation for a research paper of your choice within the pool of required readings (part II). The choice of the paper is subject to the approval of the lecturer. (See the last page for detailed requirement of the referee report)

- ***For Undergraduate and Master Students:***

Your group can either choose to write a referee report for a research paper or to write a report of your participation at [ETF Global Portfolio Challenge \(etfportfoliochallenge.com\)](https://etfportfoliochallenge.com)



Timeline for the ETF Global Portfolio Challenge:

- **Friday, September 16: Last date for Enrolment**
- Monday, September 19: Performance period begins
- Friday, September 23: 1st Rebalance/Reselection Date
- Weekly Portfolio Rebalancing to rebalance every week by Friday at 4:00 PM ET
- Friday, December 2: Final Rebalance/Reselection Date
- Friday, December 9: Performance period concludes
- Monday, December 12: Contest Winners Announced

Report requirement:

State your portfolio position, and trading strategy, and justify your strategy by data analysis.

Textbooks and References:

- **Journal Articles in the Reading List**
- **Require textbooks and manuscripts**
 1. *Time Series Analysis*, by James D. Hamilton, Princeton University Press; 1st Edition, Kindle Edition, ISBN 9780691218632, 2020/09/01
 2. [Lectures in Quantitative Economics](#) by [Thomas J. Sargent](#) and [John Stachurski](#) (online)
 3. [Time Series Analysis, Regression and Forecasting with tutorials in Python](#) (online)
 4. *Asset Pricing*, by [John H. Cochrane](#), New Age International Publisher, January 1, 2010, 978-8122431247 (AP)
 5. *Time Series Analysis for Macroeconomics and Finance*, by John H. Cochrane, Lectures Notes for Ph.D. Students in Finance, The University of Chicago, 2005. (TSMF)
 6. *Financial Markets and the Real Economy*, by John H. Cochrane, CHAPTER 7 - Financial Markets and the Real Economy, Editor(s): Rajnish Mehra, In Handbooks in Finance, Handbook of the Equity Risk Premium, Elsevier, 2008, Pages 237-325, 9780444508997, (FMRE)
- **Recommended references:**
 1. *Beyond Diversification: What Every Investor Needs to Know About Asset Allocation*, by Sébastien Page, McGraw-Hill Education; 1st edition, November 10, 2020, 1260474879
 2. *The Econometrics of Financial Markets*, by John Campbell, A. Lo, and C. MacKinlay, Princeton University Press, 1997.
 3. *Econometric Analysis*, by William Greene, Macmillan Publishing Company, 1990.
 4. [Monetary Economics PhD course — John H. Cochrane \(johnhcochrane.com\)](#)
 5. Tips on preparation of presentation and writing papers
 - Cochrane, J. (2005) [Writing tips for PhD students](#)
- Useful websites for data and programming
 - <http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/>
 - <http://wrds.wharton.uppen.edu>
 - <http://www.bea.gov/beahome.html>
 - <http://www.federalreserve.gov/releases/>
 - <http://timeseriesreasoning.com>



Reading List and Class Schedule (tentative and subject to changes):

- 1. Lecture 1-3 ARMA Models, Autocorrelation, Prediction and Impulse-Response Functions**
 - TSMF Chapter 1-5
 - TSA Chapter 3-5
 - Bloom, N. (2009), The Impact of Uncertainty Shocks. *Econometrica*, 77: 623-685.
 - Bayer, C., Luetticke R., Pham-Dao L., Tjaden V. (2019), Precautionary Savings, Illiquid Assets, and the Aggregate Consequences of Shocks to Household Income Risk. *Econometrica*, 87: 255-290.
- 2. Lecture 4-6 Wold representation, VAR, Granger Causality, Kalman Filter**
 - TSMF Chapter 6-7
 - TSA Chapter 11, 13, Appendix A
 - Cochrane, John (1991), "Volatility Tests and Efficient Markets: A Review Essay", *Journal of Monetary Economics* 27, 463-485.
 - Cochrane, John (1992), "Explaining the Variance of Price-Dividend Ratios", *Review of Financial Studies*, 5(2), 243-280
 - Cochrane, John (2007), "The Dog that Did Not Bark: A Defense of Return Predictability", *Review of Financial Studies Advance*, Access September 2007
 - Cochrane, John H. (2021), "The Dog and the Straw Man: Response to "Dividend Growth Does Not Help Predict Returns Compared to Likelihood-Based Tests: An Anatomy of the Dog"", *Critical Finance Review*: Vol. 10: No. 3, pp 465-470.
 - Goyal, Amit and Ivo Welch (2008), "A Comprehensive Look at The Empirical Performance of Equity Premium Prediction", *Review of Financial Studies* 21(4) 1455-1508.
 - Hjalmarsen, Erik and Tamas Kiss. forthcoming. "Dividend Growth Does Not Help Predict Returns Compared to Likelihood-Based Tests: An Anatomy of the Dog." *Critical finance review*.
- 3. Lecture 6-8 Spectral Analysis**
 - TSMF Chapter 8
 - TSA Chapter 3, 6
 - Lucas, R.E. and E. C. Prescott (1974), "Equilibrium Search and Unemployment," *Journal of Economic Theory*, 7(2), 188-209
 - Kydland, F.E. and E.C. Prescott (1982), "Time to Build and Aggregate Fluctuations," *Econometrica*, 50(6), 1345-70.
 - Cochrane, John (1989), "The Return of the Liquidity Effect: A Study of the Short Run Relation between Money Growth and Interest Rates" *Journal of Business and Economic Statistics* 7, 75-83.
 - King, Robert G. and Mark W. Watson (1996), "Money, Prices, Interest Rates, and the Business Cycle" *Review of Economics and Statistics* 78:35-53.
- 4. Lecture 9-12 Unit Root and Cointegration**
 - TSMF Chapter 10, 11
 - TSA Chapter 17, 18, 19.
 - Campbell, John Y. and P. Perron (1991), Pitfall and Opportunities: What Macroeconomists Should Know about Unit Roots, in O.J. Blanchard and S. Fisher (eds.), *NBER Macroeconomics Annual*, The MIT Press, 141-201.



- Campbell, John Y. and Robert J. Shiller (1987), “Cointegration and Tests of Present Value Models” *Journal of Political Economy* 95, 1062–1088.
- Campbell, John Y., and Robert J. Shiller (1988a), “The Dividend-Price Ratio and Expectations of Future Dividends and Discount Factors”, *Review of Financial Studies* 1:195–228.
- Campbell J., and Shiller R. (1988b), “Stock Prices, Earnings and Expected Dividends,” *Journal of Finance*, 43, 661-676.
- Campbell, J. and T. Vuolteenaho (2004), “Bad Beta, Good Beta”, *American Economic Review* 94, 1249-1275
- Cochrane, John (1988), How Big is the Random Walk in GNP? *Journal of Political Economy* 96 (October 1988) 893-920.
- Cochrane, John (1991a), Comments on Campbell and Perron, in O.J. Blanchard and S. Fisher (eds.), *NBER Macroeconomics Annual*, The MIT Press, 201-210.
- Cochrane, John (1991b), A Critique of The Application of Unit Root Tests *Journal of Economic Dynamics and Control* 15 (April 1991) 275-284.
- Cochrane, John (1994), Permanent and Transitory Components of GNP and Stock Prices” *Quarterly Journal of Economics* CIX (February 1994) 241-266.
- Cochrane, John (1999), New Facts in Finance, Economic Perspectives XXIII (3) (Federal Reserve Bank of Chicago), NBER working paper 7169.
- Engle, R. and C. W. J. Granger (1987), “Cointegration and Error Correction: Representations, Estimation and Testing,” *Econometrica*, 55, 252-76.
- Stock, J.H. and M.W. Watson (1988), “Testing for Common Trends,” *Journal of American Statistical Association*, 83, 1097-1107.

5. Lecture 13-14 GMM

- TSMF Chapter 14
- AP Part II Chapter 10-16.
- Hansen, Lars P. (1982), “Large Sample Properties of Generalized Method of Moments Estimators”, *Econometrica*, Vol. 50, No. 4, 1029-1054.
- Hansen, Lars P. and Kenneth J. Singleton (1982), “Generalized Instrumental Variables Estimation of Nonlinear Rational Expectation Models”, *Econometrica*, Vol. 50, No. 5, 1269-1286.
- Petersen, Mitchell A., (2008) “Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches”, *Review of Financial Studies*, forthcoming.

6. Lecture 15-16 Measuring Uncertainty and Long-Run Risk*

- Ai, Hengjie (2010), “Information Quality and Long-Run Risk: Asset Pricing Implications”, *Journal of Finance*, Vol. 65, No. 4, 1333-1367.
- Anderson, E.W., Hansen, L.P., Sargent, T.J., 2003. A quartet of semigroups for model specification, robustness, prices of risk, and model detection. *Journal of the European Economic Association*, 1, 68-123.
- Anderson, R., Karim, M., Li, N., Reeb, D., 2022. The family firm ownership puzzle. *Review of Corporate Finance*, Special Issue on Finance and Family Business, forthcoming.
- Bali, Turan G., Stephen J. Brown, Yi Tang. 2017. Is economic uncertainty priced in the cross-section of stock returns?, *Journal of Financial Economics*, Vol. 126, no. 3, 471-489
- Bansal and Yaron (2004) , “Risks for the Long Run: A Potential Resolution of Asset Pricing Puzzles,” *Journal of Finance* 59, August 2004: 1481-1509



- Bansal, R. R. F. Dittmar and C. T. Lundblad (2005), “Consumption, Dividends, and the Cross Section of Equity Returns”, *Journal of Finance*, Vol. 60, No. 4, 1639-167
- Barillas, Francisco, Lars Peter Hansen, Thomas J. Sargent (2009) “Doubts or variability?”, *Journal of Economic Theory*, 144, 2388-2418
- Brenner, Menachem, Yehuda Izhakian. 2018. Asset pricing and ambiguity: Empirical evidence, *Journal of Financial Economics*, Vol. 130, no. 3, 503-531
- Hansen, L. P. (2020), Comment on: Pseudo-True SDFs in Conditional Asset Pricing Models, *Journal of Financial Econometrics*, Vol. 18, No. 4, 715–720
- Hansen, L. P. (2022), Research Reflection: Navigating Uncertainty
- Hansen, L.P., J. Heaton and N. Li (2008) “Consumption Strikes Back?: Measuring the Long-Run Risk”, *Journal of Political Economy*, Vol. 116, no.2, 260-302
- Hansen, Lars Peter and Thomas J. Sargent. 2001. "Robust Control and Model Uncertainty." *American Economic Review*, 91(2): 60-66.
- Hansen, Lars Peter and Thomas J. Sargent (2021) Macroeconomic uncertainty prices when beliefs are tenuous, *Journal of Econometrics*, Vol. 223, No. 1, 222-250
- Hansen, Lars Peter, Sargent, Thomas J. (2022) Risk, Uncertainty, and Misspecification: Decision Theory, Robust Control, and Statistics, working paper.
- Izhakian, Y. (2017) Expected utility with uncertain probabilities theory. *Journal of Mathematical Economics*, 69, 91-103.
- Jurado, K., S.C. Ludvigson, Ng S. 2015. Measuring uncertainty, *American Economic Review*, 105, 1177-1216
- Li, N., Zhu, Y.H., 2021. The impact of Covid-19 on stock market in China. *Frontiers of Economics in China*, 16(4), 714-743.



A Brief Guide for Writing Your Report as a Referee

Your report should not normally exceed 10 pages of A4 paper. Since you read papers from the journals, you may wish to choose one of these as a starting point. In your report as a referee you should consider the following issues.

- 1) How important is the question addressed in your chosen paper?
- 2) How important/interesting are the results which have been obtained in this area? When assessing this, consider the importance of the paper for financial economists in general.
- 3) How well are the conclusions of the paper supported? In particular:
 - Are there any additional tests of the model/conclusions that should have, or could have reasonably been made to support the conclusions? (If it really is essential to make very extensive additions to the paper this is unlikely to be practical and therefore the paper would usually be rejected.)
 - Are the data/conclusions internally consistent and consistent with other reports in the literature? If not, is there a concern about the present data and have the authors discussed plausible reasons for the discrepancy?
 - Are the assumptions made likely to be valid? Should the authors perform additional checks?

You are free to decide on the format of a referee's report. However, there is often a first paragraph which summarizes the paper's conclusions, methods and significance (in the view of the referee). Often the strengths of the paper are highlighted here. This is then followed by a series of points detailing the possible concerns about the methods or conclusions. For the paper you cannot make some useful suggestions, you may want to present the results in the extended periods and see if there is any change in the results.

Theory and Practice on Improving Immunity Based on Chinese Traditional Exercises

About this course

Exercise is medicine. Regular and moderate exercise can effectively strengthen immune system so as to reduce the risk of virus infection and also improve or assist in the treatment of dysthymic disorders like anxiety and depression. This course provides suggestions for the general public about how to actively respond to the outbreak of novel coronavirus. It also explains: how the immune system reacts when viruses invade into the body; why exercises can enhance immunity and what is the mechanism; what the difference is between western sports and traditional eastern exercises. Besides, the course includes training lessons on Daoyin, Badaunjin and other exercises conducive to immunity improvement.

This course is characteristic for its combination of physical education and medicine, so the course will be taught by experts in either sports or medicine. The teaching content covers both disciplinary theory and specific training method, showcasing the unique culture and charm of the East while conducting cross-cultural communication as well as sharing the wisdom of traditional exercises and modern research and application in this regard.

Objectives

1. Knowledge learning: understanding the human immune system, the theoretical basis of enhancing immunity through exercises as well as the similarity and disparity between western sports and traditional eastern exercises.
2. Skill learning: practicing Ma Wang Dui Dao Yin Shu, Baduanjin, and other Chinese traditional exercises conducive to immunity improvement.

Syllabus

01

Introduction (Lecturer: WANG Huiru)

Period

- 1.1 Introduction to the Course
- 1.2 Overview of Ma Wang Dui Dao Yin Shu
- 1.3 Overview of Baduanjin

02

Active Response to Public Health Emergency (Lecturer: XU Gang/ WANG Huiru)

Period

- 2.1 Practice: Ma Wang Dui Dao Yin Shu (1-2)
- 2.2 The concept and classification of emergency public health events
- 2.3 The characteristics and hazards of emergency public health events
- 2.4 The coping strategies and preventive measures for emergency public health events

03

Human Immune System (1) (Lecturer: WANG Feng/ WANG Huiru)

Period

- 3.1 Practice: Ma Wang Dui Dao Yin Shu (3-4)
- 3.2 Introduction of Immune system
- 3.3 The concept of immunity, innate immunity and adaptive immunity
- 3.4 Introduce the early stage of immunology research

04

Human Immune System (2) (Lecturer: WANG Feng/ WANG Huiru)

Period

- 4.1 Practice: Ma Wang Dui Dao Yin Shu (5-6)
- 4.2 Introduce Nobel prize related with immunology
- 4.3 Master immune system components and their basic functions
- 4.4 Introduce the discovery of T cell receptor, the specificity concept in immunology, and the art of Immune system

05

The Theoretical Basis of Exercises Improving Human Immunity (1) (Lecturer:

HUANG Tao/ WANG Huiru)

Period

- 5.1 Practice: Ma Wang Dui Dao Yin Shu (7-8)
- 5.2 Moderate Exercise and Disease Prevention—the Importance of Immune System
- 5.3 Physical Activity Guidelines
- 5.4 Characteristics of Traditional Eastern Exercises and their Relevance to Health and Immunity

06

The Theoretical Basis of Exercises Improving Human Immunity (2) (Lecturer:

HUANG Tao/ WANG Huiru)

Period

6.1 Practice: Ma Wang Dui Dao Yin Shu (7-8)

6.2 Immune Responses to Exercise

6.3 Exercise Workload, Infection Risk, and Illness Risk

6.4 Exercise and immunosenescence

07

Cases of Eastern Exercises Improving Human Immunity (Lecturer: YUAN Xiaoling/

WANG Huiru)

Period

7.1 Practice: Ma Wang Dui Dao Yin Shu (9-10)

7.2 General Introduction of Mind-body Therapies

7.3 Two-Benefits for Yoga Practice on Healthy Population and Cancer Survivors

7.4 Three- Benefits for Qi-gong and Tai Chi Practice on Healthy Population

7.5 Effects of Mind-Body Therapies on the Immune System

08

Traditional Chinese Exercise (Daoyin) (Lecturer: WANG Huiru)

Period

8.1 A Brief Introduction to Daoyin

8.2 Practice: Ma Wang Dui Dao Yin Shu (11-12)

09

Baduanjin (1) (Lecturer: WANG Huiru)

Period

9.1 A Brief Introduction to Baduanjin

9.2 The Practice of Baduanjin (1-3)

10

Baduanjin (2) (Lecturer: WANG Huiru)

Period

10.1 The Practice of Baduanjin (4-6)

10.2 Review Ma Wang Dui Dao Yin Shu

11

Baduanjin (3) (Lecturer: WANG Huiru)

11.1 The Practice of Baduanjin (7-8)

11.2 Review Ma Wang Dui Dao Yin Shu

12

The key points of examination and general review (Lecturer: WANG Huiru)

Period

12.1 The key points of examination

12.2 Review Ma Wang Dui Dao Yin Shu

12.3 Review of Baduanjin

Grading Criteria

Theoretical part 40%

In this course, you will be graded on the three areas listed below:

1. Participation (20%): participating in the discussion on the “Course Discussion” forum and contributing no less than 10 postings and replies are required for a full score.
2. Quizzes (60%): each quiz consists of 5 multiple-choice questions with 1 point for each question and 5 points in total. There are altogether 8 chapter quizzes in this course.
3. Final Examination (20%): the final examination consists of 20 multiple-choice questions and 20 true-or-false questions with 1 point for each question and 40 points in total.

Practice 60%

You may choose one of Ma Wang Dui Dao Yin Shu or Baduanjin as the final practice examination

The grading criteria of this course:

Pass: 60 and above; Excellence: 80 and above.

Class Participation

Students are encouraged to actively participate in the class discussion as well as the discussion board online. Such activities include good comments, questions, and articles.

ICE6202 Digital Image Processing

Course Teacher

Prof. Rui Zhang

Email: zhang_rui@sjtu.edu.cn

Lecture 1 Introduction

Lecture 2 Sampling & Reconstruction, Quantization, Radiometry
Fundamentals

Lecture 3 Colorimetry Fundamentals, Human Visual System,
Human Visual Models & Image
Quality Assessment

Lecture 4 2D DFT, DCT, WHT

Lecture 5 KLT, 2D DWT

Lecture 6 Gray Level Enhancement

Lecture 7 Image Filtering in Spatial Domain, Image Filtering in
Frequency Domain, Median
Filtering

Lecture 8 Image Restoration

Lecture 9 Image Reconstruction

Lecture 10 Theoretical Fundamentals of Image Compression

Lecture 11 Entropy Coding

Lecture 12 Predictive Coding, Transform Coding

Lecture 13 Edge Detection, Line Detection

Lecture 14 Region-Based Segmentation, Morphological Filtering

Lecture 15 Image Description

Lecture 16 Review

Textbook

Digital Image Processing (Third Edition), Rafael C. Gonzalez,

Richard E. Woods, 2017

Evaluation Criteria

Practice exercise 20%

Project reports 40%

Final exam 40%

Ve/Vm504 Solid State Physics

Fall 2018 Course Syllabus

Class Schedule

Monday & Wednesday 10:00-11:40 AM

Location: CRQ

Instructor

Prof. BAO, Hua

Room 522, JI Building

Office Hour: any time as long as I am available in the office

Email: hua.bao@sjtu.edu.cn

Teaching Assistant

Office hour: TBD Location: TBD Email: TBD

Textbook

Introduction to Solid State Physics by C. Kittel

Reference

Heat Transfer Physics by Massoud Kaviany

Introduction to Quantum Mechanics by D. J Griffiths

Course Outline

Introduction

Introduction to quantum mechanics and statistical mechanics, crystal structure, reciprocal lattice, chemical bonding

Thermal properties

Lattice vibration, lattice dynamics, phonon, heat capacity, thermal conductivity, introduction to lattice dynamics, phonon Boltzmann Transport Equation

Electrical properties

Free electron gas, tight-binding, band structure, semiconductors, introduction to ab initio calculation

Optical properties

Light-matter interaction, mechanisms and models

Grading Policy

In-class exercises 25%

Homework 20%

Course Project 20%

Final 35%

List of Topics

1. Crystal structure
2. Introduction to quantum mechanics
3. Chemical bonding
4. Introduction to statistical mechanics
5. Lattice vibration 1
6. Lattice vibration 2
7. Lattice dynamics
8. Thermal properties of solids
9. Phonon in nanostructures
10. Free electron gas
11. Band structure 1
12. Band structure 2
13. Semiconductor 1
14. Semiconductor 2
15. Introduction to semiconductor device
16. Introduction to electromagnetic theory
17. Dielectric properties
18. Optical phonon and quantum theory of light
19. Solid state energy conversion
20. Final exam review

AE8104 Finite Element Analysis of Composites (3 credits)

Fall 2022

Class time: TBD, East Middle Hall 4-301

<https://oc.sjtu.edu.cn/courses/36842>

Course objective:

This course aims at providing fundamental and practical notions in finite element analysis. The course will present systematic approaches for the derivation of various finite elements. The students will also be introduced to numerical techniques for the solution of the discretized governing equations. Practical aspects such as mesh generation and choice related to numerical integration will also be presented. This course will mostly be based on structural analysis, focusing on both isotropic and composite materials. Students need to program their own FE code to accomplish homework and final project.

Instructors:

Yile Hu yilehu@sjtu.edu.cn office A430

TA:

Jiaming Liang liangjiaming_6@sjtu.edu.cn
Dahua Hao haodahua@sjtu.edu.cn

Office Hours:

To be determined.

Textbook:

1. Class Notes;
2. Finite Element Analysis of Composite Materials, Ever J. Barbero;
3. The Finite Element Method: Its Basis & Fundamentals 7th Edition, O.C.Zienkiewicz.

Prerequisites:

Student should have previous knowledge or currently registered to courses: Solid Mechanics, Mechanics of Composites, Linear Algebra, and Numerical analysis. Moreover, this course requires some programming knowledge with C/C++, FORTRAN, Java, Python or any other computer language you prefer. Matlab is not recommended for graduate students.

Grade Policy:

Letter grade's policy is subjected to SJTU policy:

A+ [95, 100], A [90, 95), A- [85, 90);
B+ [82, 85), B [78, 82), B- [75, 78);
C+ [71, 75), C [67, 71), C- [63, 67);
D [60, 63), F [0, 60).

Homework 30%, Quiz 10% (two quiz), Midterm exam 30%, Final project 30%.

Class Policy:

1. Class attendance is **mandatory**. If a student is absent, proper documented justification is **required**;

2. All holidays or special events observed by organized religious will be honored for those students who show affiliation with that particular religion;
3. Professional behavior is expected in this course. Cell phone, laptop and tablet should be turned off unless for class needed.

Policies against plagiarism:

1. Homework and final project: if there is evidence that a student has copied some solution material (from another student and/or a manual), grade zero will be assigned to this particular homework (project);
2. Midterm exam and quiz: If a student is caught taking information or passing information from or to another student during an exam, grade zero will be assigned to the exam (quiz).

Students with Disabilities:

If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is important that you notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

Class Agenda (Tentative):

Week	Content	Dates
1	Syllabus Chapter I. Introduction Chapter II. Construction of FE equations <ul style="list-style-type: none"> - Minimization of potential energy; - Rayleigh-Ritz method; 	Sept 24
2	<ul style="list-style-type: none"> - Galerkin method; - Variational approach. Chapter III. One-Dimensional Problem 3.1. 2-noded truss element <ul style="list-style-type: none"> - Shape functions; 	Oct 8
3	<ul style="list-style-type: none"> - Coordinate transformation; - Assemble global stiffness matrix; - Boundary conditions; - Reduced stiffness matrix; - Calculate nodal and elemental variables. 	Oct 15
4	3.2. 3-noded truss element <ul style="list-style-type: none"> - Elemental stiffness matrix; - Coordinate transformation. 3.3. Multi-Point Constraints (MPC)	Oct 22
5	Quiz Chapter IV. Two-Dimensional Problem 4.1. Constant Strain Triangle (CST) element <ul style="list-style-type: none"> - Parent coordinate system; - Approximated solution; - Shape function; - Jacobian matrix; - Elemental stiffness matrix; - Equivalent nodal force. 	Oct 29
6	4.2. Bilinear quadrilateral element <ul style="list-style-type: none"> - Parent coordinate system; - Approximated solution; - Shape function; - Elemental stiffness matrix; - Numerical integration; - Equivalent nodal force; - Stress and strain extraction. 	Nov 5
7	4.3. Shear locking and hourglass mode 4.4. Pascal's triangle 4.5. Quadratic triangle element 4.6. Quadratic quadrilateral element 4.7. 9-noded quadrilateral element 4.8. Axisymmetric Problem	Nov 12
8	Chapter V. Three-Dimensional Problem 5.1. 4-noded tetrahedral element 5.2. 10-noded tetrahedral element 5.3. 8-noded hexahedral element <ul style="list-style-type: none"> - Selectively Reduced Integration (SRI); - Equivalent nodal force. 5.4. 20-noded hexahedral element <ul style="list-style-type: none"> - 14-Points Rule (14PR); - Equivalent nodal force. 	Nov 19
9	Midterm exam	TBD

10	Chapter VI. Solution Technique 6.1. Gauss elimination 6.2. LU decomposition 6.3. LDL^T decomposition 6.4. Conjugate Gradient method <ul style="list-style-type: none"> - CG algorithm; - Preconditioned CG algorithm; - Choice of preconditioner. 6.5. Generalized Minimal Residual method <ul style="list-style-type: none"> - Krylov subspace; - GMRes algorithm; - Preconditioned GMRes algorithm. 6.6. Convergence analysis	Nov 26
11	Chapter VII. Structural Element 7.1. Euler-Bernoulli beam element <ul style="list-style-type: none"> - Beam theory; - Governing equation; - Galerkin's method; - Shape function; - Elemental stiffness matrix; - Coordinate transformation; - Equivalent nodal force. 	Dec 3
12	7.2. Timoshenko beam element <ul style="list-style-type: none"> - Shape function; - Elemental stiffness matrix. 7.3. Nonconforming plate element <ul style="list-style-type: none"> - Plate theory; - C₁ continuity; - Shape function; - Elemental stiffness matrix; - Equivalent nodal force. 	Dec 10
13	7.4. Conforming plate element <ul style="list-style-type: none"> - Shape function; - Elemental stiffness matrix; - Equivalent nodal force; - Mixed interpolation for transverse shear strains. 	Dec 17
14	Quiz Chapter VIII. Modeling Macromechanical Structures of Composites 8.1. Modeling composite laminate with shell element 8.2. Modeling composite laminate with solid element 8.3. Failure criteria and continuum damage mechanics	Dec 24
15	Chapter IX. Modeling Micromechanical Structures of Composites 9.1. Continuous fiber reinforced composites 9.2. Short fiber reinforced composites	Dec 31
16	Chapter X. Dynamic and Buckling Analyses 10.1. Linear buckling analysis 10.2. Derivation of mass matrices 10.3. Computation of eigenvalues and mode shapes	Jan 7

MATH9111 Basic Geometric Mechanics

15 September – 29 December, 2021 Fall Semester

Course Instructor: 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)

Course arrangement

8 biweekly topics:

- 1.) Historical motivation. Mechanics on symplectic vector spaces.
- 2.) Examples. Discussion of infinite dimensional systems (evolutionary PDEs)
- 3.) Working knowledge tensor analysis on manifolds.
- 4.) Hamiltonian systems on manifolds. Nonlinear dynamics.
- 5.) Cotangent bundles, magnetic terms, Kaluza-Klein theory
- 6.) Lagrangian mechanics, link to Riemannian geometry
- 7.) Variational principles, motion in a potential field.
- 8.) Constraints, Dirac formula, moving systems.

The Law of the Sea and China' Practice

Course Syllabus

LIU Dan, Associate Research Professor

KoGuan Law School, Shanghai Jiao Tong University

Spring, 2022

The Law of the Sea and China' Practice

Syllabus

Associate Research Professor: LIU Dan

Email: liudan2015@sjtu.edu.cn

Date: Friday, 18:00-20:20 PM

(NOTE: Assignments begin on page)

Weeks	Topic
1	I. Introduction to the Law of the Sea A. The Goals of Oceans Policy: Community and China's Interests B. Introduction to the UN Conferences on the Law of the Sea, Especially the Third UN Conference on the Law of the Sea (UNCLOS III) C. The History of the Law of the Sea and China's Policy
2	II. International Law Governing Jurisdiction Zones A. Baselines and related issues B. Territorial sovereignty a. Internal waters b. Territorial sea c. International straits d. Archipelagic waters C. China's Domestic Laws and Policies on Maritime Zones within the National Jurisdiction
3	II. International Law Governing Jurisdiction Zones D. Contiguous Zone E. Exclusive Economic Zone F. Continental Shelf G. The High Seas H. "The Area" I. China's Domestic Laws and Policies on the EEZ, Continental Shelf, and China's Mining Activities in "the Area"
4	III. Maritime Delimitation A. Article 74 (1) and 83(1) of the 1982 UNCLOS B. Case Study
5	IV. Dispute Settlement Mechanism under the 1982 UNCLOS A. Part XV of the 1982 UNCLOS B. The International Tribunal for the Law of the Sea and Other Dispute Settlement Mechanisms
6	V. Dispute Settlement Mechanism under the 1982 UNCLOS C. Case Study

The Law of the Sea and China' Practice
Assignment

Associate Research Professor: LIU Dan
Date: Friday, 18:00-20:20 PM

Email: liudan2015@sjtu.edu.cn

	Texts for Reading Assignments
Refer-ences	<p>1) Yoshifumi Tanaka, <i>The International Law of the Sea</i>, 1st Edition (Cambridge, 2012).</p> <p>2) Donald R. Rothwell and Tim Stephens, <i>The International Law of the Sea</i> (Hart Publishing Ltd, 2010)</p> <p>3) Keyuan Zou, <i>China's Marine Legal System and the Law of the Sea</i> (Leiden: Martinus Nijhoff, 2005).</p>
Caseb-ook	Louis B Soh, Erik Franckx et al, eds., <i>Cases and Materials on the Law of the Sea</i> (Leiden: Brill Nijhoff, 2014)
Weeks	Topic
1	<p style="text-align: center;">Introduction to the Law of the Sea</p> <p>A. The Goals of Oceans Policy: Community and China's Interests</p> <p>B. Introduction to the UN Conferences on the Law of the Sea, Especially the Third UN Conference on the Law of the Sea (UNCLOS III)</p> <p>C. The History of the Law of the Sea and China's Policy</p> <p><u>Reading assignment:</u></p> <p>-Yoshifumi Tanaka, 2012, pp.1-37; or, Donald R. Rothwell & Tim Stephens, 2010, pp.1-29.</p> <p>-The 1951 Anglo-Norwegian Fisheries case, available at Louis B Soh, Erik Franckx et al, eds., 2014, pp. 227-240.</p> <p><u>References:</u></p> <p>-Zou Keyuan (1998) Innocent passage for warships: The Chinese doctrine and practice, <i>Ocean Development & International Law</i>, 29:3, 195-223;</p> <p>- Zou Keyuan (2002) Navigation of foreign vessels within China's jurisdictional waters, <i>Maritime Policy & Management</i>, 29:4, 351-374.</p> <p><u>Questions:</u></p> <p>1) Are there any laws regarding territorial sea in your home country? If so, when did the laws enact? According to such law, how wide the breath of the territorial sea in your country?</p> <p>2) Please list the names of the international organizations regarding</p>

	<p>world ocean affairs, especially the law of the seas.</p> <p>3) Find and download the judgment/case summary of the 1951 Anglo-Norwegian Fisheries case from the website of the International Court of Justice (the ICJ, https://www.icj-cij.org/).</p>
2	<p style="text-align: center;">International Law Governing Jurisdiction Zones</p> <p>A. Baselines and related issues B. Territorial sovereignty a. Internal waters b. Territorial sea c. International straits d. Archipelagic waters C. China's Domestic Laws and Policies on Maritime Zones within the National Jurisdiction</p> <p>第二周、《海洋法公约》中规制海域的国际法。 基线、领海与毗连区、内水、</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 4 and Chapter 5; or, Donald R. Rothwell & Tim Stephens, 2010, Section III & IV, Chapter 4-7.</p> <p><u>References:</u> 1) China's Domestic Laws and Policies on the EEZ and the Continental Shelf (Chinese version), available at http://www.soa.gov.cn/zw/gk/fwjgwywj/shfl/201508/t20150821_39618.html. 2) Recent legislation on China's mining activities in "the Area" (Chinese version), available at http://www.soa.gov.cn/zw/gk/fwjgwywj/shfl/201602/t20160229_50172.html.</p>
3	<p style="text-align: center;">International Law Governing Jurisdiction Zones</p> <p>A. Contiguous Zone B. Exclusive Economic Zone C. Continental Shelf D. The High Seas E. "The Area" F. China's Domestic Laws and Policies on the EEZ, Continental Shelf, and China's Mining Activities in "the Area"</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 3&4.</p> <p><u>Questions:</u> 1) Can you distinguish the differences between the Continental Shelf and the EEZ? 2) Are there any previous/pending cases regarding maritime delimitation between your home country and the neighboring</p>

	<p>countries? If so, please list these cases and explain the final result or recent progress.</p> <p>3) What do you think of the upcoming Fukushima Radioactive Water Discharge (see https://www.theguardian.com/world/2021/aug/26/fukushima-operator-s-to-build-undersea-tunnel-to-dump-contaminated-water)?</p>
4	<p style="text-align: center;">Maritime Delimitation and Marine Pollution</p> <p>A. Protection of marine environment B. Article 74 (1) and 83(1) of the 1982 UNCLOS C. Case Study</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 8 and Chapter 6.</p> <p><u>Reference:</u> 1) Darian Ghorbi, <i>There's Something in the Water: The Inadequacy of International anti-Dumping Laws as Applied to the Fukushima Daiichi Radioactive Water Discharge</i>, 27 AM. U. INT'L L. REV. 473 (2012). 2) Xiaouu Zheng, "Does Fukushima wastewater decision violate our environmental rights?", Apr 21, 2021, available at https://www.ejiltalk.org/does-fukushima-wastewater-decision-violate-our-environmental-rights/. 3) Dan Liu & Ling Zhu, <i>Assessing China's Legislation on Compensation for Marine Ecological Damage: A Case Study of the Bohai Oil Spill</i>, Marine Policy 50 (2014), pp.18-26.</p>
5	<p style="text-align: center;">Dispute Settlement Mechanism under the 1982 UNCLOS</p> <p>A.Part XV of the 1982 UNCLOS B.The International Tribunal for the Law of the Sea and Other Dispute Settlement Mechanisms</p> <p><u>Reading assignment:</u> 1.Donald R. Rothwell & Tim Stephens, 2010, Chapter 18; or, Yoshifumi Tanaka, 2012, Chapter 13. 2.Part XV, especially Article 298 of the 1982 UNCLOS.</p>
6	<p style="text-align: center;">Dispute Settlement Mechanism under the 1982 UNCLOS</p> <p>C.Case Study</p> <p><u>Reading Assignment:</u> The South China Sea Arbitration case (Introduction to fact and background), available at the website of the Permanent Court of Arbitration (the PCA, https://pca-cpa.org/en/home/).</p>

LIU Dan

Associate Research Professor

LIU Dan is currently Associate Research Professor, Center for Polar and Deep Ocean Development, KoGuan Law School, Shanghai Jiao Tong University (<http://law.sjtu.edu.cn//TeacherDetail157.aspx>). Her research areas include public international law, the law of the sea, polar law and policy. She is currently a board member of the Chinese Society of International law, subeditor for the *Law of the Sea Review*.

Professor LIU used to serve as intern for Legal Department of the International Tribunal for the Law of the Sea (2006). Her overseas experience includes working as visiting professor at Albany Law School of the U.S (2010), visiting scholar at East Asian Institute of the National University of Singapore (2014), and visiting scholar at the Stefansson Arctic Institute of Iceland (2015-2016). Her monographs include *International Law on Marine Living Resources* (2012), *Territorial Status of Ryukyu Islands: History and International Law* (2019), and *Unmanned Maritime Systems and International Law* (2020). Her publications have appeared in journals both in English and Chinese, such as *Marine Policy*, *the Yearbook of Polar Law*, *Arctic Yearbook*, *Contemporary Law Review*, etc. She has been principle organizer of more than 20 research projects from the National Social Science Foundation of China, State Oceanic Administration of China, and China-Nordic Arctic Research Center. She also contributed to newspapers such as *the Diplomat*, *Global Times*, *Peng Pai News*, *Wen Hui Po* and *China Ocean News*. As one of the Chinese delegations, she has participated in many rounds of Track II dialogues in relation to the ocean and artic affairs. She has taught Public International Law, International Environmental law, Dispute Settlement Mechanism, the Law of the Sea, and Chinese Investment Law for LLM students and EMBA students from Europe, the U.S, and the Latin American countries. From 2009, she has also worked as coach for Jessup Term of SJTU.

Syllabus

The Sustainable Development Goals of the United Nations

Course Code	ENVR8163	Teaching Hours	32	Credits	2
Course Name	联合国可持续发展目标				
	The Sustainable Development Goals of the United Nations				
Instruction Language	English				
School	China-UK Low Carbon College				
Instructors	Name	Title	Department	E-mail	
	Yuquan Zhang	Associate Professor	China-UK Low Carbon College	yqwzhang@sjtu.edu.cn	
Course Description	<p>Aiming to spread the knowledge of the Sustainable Development Goals (SDG) of the United Nations and to evoke the interest in international governance that promotes exchanges between different cultural backgrounds, this course provides the international audience a China perspective on SDGs. For each SDG, this course will introduce the basics, review the development status of China’s relevant work, elaborate on case studies of China or other countries and regions, and discuss the potential challenges.</p> <p>The students are expected to master the definitions of SDGs, gain an understanding of China’s work in the arena of sustainable development, and develop analytical skills under a multi-faceted SDG framework. Also, the students are encouraged to brainstorm solutions that will help realize the SDGs with their own expertise. The UN SDGs were adopted in 2015, consisting of 17 SDGs that cover the societal, economic, and environmental challenges. Specifically, the SDGs include 1) no poverty, 2) no hunger, 3) good health and well-being, 4) quality education, 5) gender equality, 6) clean water and sanitation, 7) affordable and clean energy, 8) decent work and economic growth, 9) industry, innovation and infrastructure, 10) reduced inequalities, 11) sustainable cities and communities, 12) responsible consumption and production, 13) climate action, 14) life below water, 15) life on land, 16) peace, justice and strong institutions, and 17) partnerships for the goals.</p>				
Schedules	Content		Hours	Format	Instructor
	SDG1 No Poverty 1. Overview of UN SDGs 2. SDG1 and the Status of World Poverty 3. China's Anti-Poverty Efforts		2	Lecture & Discussion	Yuquan ZHANG
	SDG2 No Hunger 1. The Importance of Food Security 2. China's Agricultural Sector 3. Food Waste Reduction and Utilization		2	Lecture & Discussion	Yuquan ZHANG
	SDG3 Good Health and Well-Being 1. Fighting against Diseases Worldwide 2. China's Public Health Development		2	Lecture & Discussion	Yuquan ZHANG

	3. Case Study of Shenzhen			
	SDG4 Quality Education & SDG5 Gender Equality 1. Definitions of SDG4 and SDG5 2. Education in China & Girls 3. Job Market and Workplace & Gender	2	Lecture & Discussion	Yuquan ZHANG
	SDG6 Clean Water and Sanitation 1. SDG6 and Water Resources 2. China's Water Treatment 3. Case Studies of Shanghai and Hong Kong	2	Lecture & Discussion	Yuquan ZHANG
	SDG7 Affordable and Clean Energy 1. SDG7 and New Energy Development 2. China's Renewable Energy Sector 3. Outlook of New Energy	2	Lecture & Discussion	Yuquan ZHANG
	SDG8 Decent Work and Economic Growth 1. World Economy Status 2. China's Economic Status and Employment 3. Challenges Facing Economic Growth and Job Market	2	Lecture & Discussion	Yuquan ZHANG
	SDG9 Industry, Innovation and Infrastructure 1. World Industries Status 2. China's Industries, Innovation and Infrastructure 3. Challenges Facing Innovation	2	Lecture & Discussion	Yuquan ZHANG
	SDG10 Reduced Inequalities 1. Definition of SDG10 and International Inequalities 2. Societal Challenges Facing the United States 3. Future Development	2	Lecture & Discussion	Yuquan ZHANG
	SDG11 Sustainable Cities and Communities 1. World City Development Status 2. Low Carbon Transportation and Buildings 3. Outlook and Challenges	2	Lecture & Discussion	Yuquan ZHANG
	SDG12 Responsible Consumption and Production 1. SDG12 and World Development Status 2. Case Studies on China's Sustainable Consumption and Production	2	Lecture & Discussion	Yuquan ZHANG

	3. Future Challenges			
	SDG13 Climate Action 1. SDG13 and International Efforts Made 2. China's Climate Action 3. Building Climate Resilience	2	Lecture & Discussion	Yuquan ZHANG
	SDG14 Life below Water 1. SDG14 and International Efforts Made 2. Protecting the Oceanic Ecosystems 3. Challenges for Ocean Protection	2	Lecture & Discussion	Yuquan ZHANG
	SDG15 Life on Land 1. SDG15 and International Efforts Made 2. Protecting Terrestrial Ecosystems 3. Challenges for Biodiversity Conservation	2	Lecture & Discussion	Yuquan ZHANG
	SDG16 Peace, Justice and Strong Institutions & SDG17 Partnerships for the Goals 1. Definitions of SDG16 and SDG17 2. Legal Institutions, Protection and Assistance 3. Global Partnerships and Governance	2	Lecture & Discussion	Yuquan ZHANG
	Revisiting SDGs 1. Review of SDG1 to SDG17 2. Discovering the SDG Framework 3. Concluding the SDG Course	2	Lecture & Discussion	Yuquan ZHANG
Grading Policy	1. Attendance (10%) 2. Active participation in and contribution to classroom discussion (30%) 3. A term paper in group effort (suggesting 3 members; length not exceeding 2000 words, the sum of figures and tables not exceeding 5) (60%)			
Textbooks & References	Xu, Z., Chau, S.N., Chen, X. et al. Assessing progress towards sustainable development over space and time. <i>Nature</i> 577, 74–78 (2020). https://doi.org/10.1038/s41586-019-1846-3 Sachs, J.D., Schmidt-Traub, G., Mazzucato, M. et al. Six Transformations to achieve the Sustainable Development Goals. <i>Nat Sustain</i> 2, 805–814 (2019). https://doi.org/10.1038/s41893-019-0352-9 De Neve, J.E., Sachs, J.D. The SDGs and human well-being: a global analysis of synergies, trade-offs, and regional differences. <i>Sci Rep</i> 10, 15113 (2020). https://doi.org/10.1038/s41598-020-71916-9 Friedman, J., York, H., Graetz, N. et al. Measuring and forecasting progress towards the education-related SDG targets. <i>Nature</i> 580, 636–639 (2020). https://doi.org/10.1038/s41586-020-2198-8 Carley, S., Konisky, D.M. The justice and equity implications of the clean energy transition. <i>Nat Energy</i> 5, 569–577 (2020). https://doi.org/10.1038/s41560-020-0641-6 Brodie Rudolph, T., Ruckelshaus, M., Swilling, M. et al. A transition to sustainable ocean governance. <i>Nat Commun</i> 11, 3600 (2020). https://doi.org/10.1038/s41467-020-17410-2			

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%



LLM Program in Chinese Law

Course Information Sheet

Academic Year: 2022-2023	Semester: First	Instructor: Jiaxiang Hu
Instructor's Contact Information: Phone: 62934638 Email: jxhu@sjtu.edu.cn Website: Office: Office Hour: available upon appointment Please do not use email for substantive issue discussion—attend the online class and raise your questions.		
Schedule: The class meets (Monday) from 6:00 to 8:20 p.m. in Weeks 1-11 at Zoom Classroom.		
Course/Lecture Name: Chinese Foreign Trade Law		
Course/Lecture Description: This course provides a focused treatment and analysis of the major legal, policy and business aspects of foreign trade in China. With respect to China's regulation of foreign trade, areas covered include: trade in goods, trade in services, protection of intellectual property rights in trading, China's participation in the WTO and China's commitments under the multilateral trading system, WTO dispute settlement mechanism and the relevant disputes concerning China. Specifically, China's regulations on foreign trade include tariff regulation and non-tariff regulation, trade remedies including antidumping measures, countervailing measures, safeguard measures. With the challenges confronting each WTO Member, how to reform the current multilateral trade regime is also an issue which deserves special attention.		
Course Syllabus or Outline: Unit One A Brief Introduction to the Legal System of China Unit Two General Principles of Chinese Foreign Trade Law Unit Three Understanding Foreign Trade Unit Four Law Governing International Transactions of Goods Unit Five Government Regulation of Foreign Trade Unit Six Trade-related Intellectual Property Right Protection Unit Seven Foreign Trade Injury Investigation and Relief Unit Eight Foreign Trade Promotion and Legal Liabilities		

Reading Materials and Resources:

1. Textbook

Hu Jiaxiang: WTO and Its Dispute Settlement Mechanism, Zhejiang University Press, 2005

2. Articles

Hu Jiaxiang: The Role of International Law in the Development of WTO

Hu Jiaxiang: The Ambiguous Name and the Possible Redefining of a Developing Country in the WTO

Hu Jiaxiang: Closer Integration, Controversial Rules: Issues Arising from the CEPA between Mainland China, Hong Kong, and Macao

Hu Jiaxiang: Market Access or Market Restrictions – Analysis on the Regulations of PRC on Administration of Foreign-Funded Banks

Hu Jiaxiang: To Be or Not to Be---A Question to the United States---On the Countervailing Measures to Those Non-Market Economies

Hu Jiaxiang: The Role of WTO Law in the Construction of the Chinese Legal System

Hu Jiaxiang: The Role of Technological Neutrality Principle in the Development of WTO Rules

Hu Jiaxiang: Shanghai Free Trade Pilot Zone, the Model for Future China?

Hu Jiaxiang: A Small Difference in Wording, but a Big Difference in Rule-making----A Retrospective and Prospective View on the Development of China's Economic Zones

Hu Jiaxiang: The WTO Dispute Settlement System at Twenty Years: From the Perspective of the WTO Compensation Mechanism

Hu Jiaxiang & Jenny Huang: Dispute Resolution Mechanisms and Organizations in the Implementation of "One Belt, One Road" Initiative: Whence and Whither, Journal of World Trade, No.5, 2018

Hu Jiaxiang et al: Perspectives on Chinese Business and Law (intersentia Cambridge-Antwerp-Portland), 2018

3. Websites:

www.wto.org

4. Other reading materials and resources:

WTO cases

Eligibility:

1. All enrolled LLM candidates are admitted in this course;
2. Foreign exchange students and Chinese law students may be admitted in this course.

Recordings:

Recordings of classes are not permitted under any circumstances without permission of the instructor.

Examination:

1. **Final examination.** A thesis with no fewer than twenty pages of double-space lines is required. The student may choose any subject concerned with the knowledge learned in the class. Case analysis will be encouraged.
2. **Mid-semester examination.** There is one mid-semester examination with some questions either in oral or written form.

Grading:

Classroom performance: 20%

Mid-semester examination: 20%

Final Examination: 60%

Grading Scale:

A 90-100 (Excellent)

B 80-89 (Good)

C 70-79 (Satisfactory)

D 60-69 (Poor) F 0-59 (Failure)
<p>Academic Behavior and Honesty:</p> <p>During exams, exchange of information with others is unacceptable. So is the use of notes or other materials, unless explicitly authorized. Anyone suspected of violating these guidelines will be charged with academic dishonesty and subject to SJTU's disciplinary procedures.</p>
<p>Class Attendance and Participation:</p> <ol style="list-style-type: none"> 1. An attendance roster is kept, and students are expected to attend all class sessions on time and as scheduled. 2. Active student participation is an essential part of this course. Students should come to class prepared to discuss the assigned readings in a thoughtful, productive, and civil manner. You should be ready to ask and answer questions on the assigned readings. You need to participate actively in the class, but you should not attempt to dominate class discussion. 3. Students often disagree with each other and with the instructor. We encourage an atmosphere in which we are free to challenge and criticize each other's arguments, but all of us should be respectful and civil in our disagreements. 4. Class attendance and participation will not be formally graded.

Reference List for Further Reading

- (1) HU, Jiaxiang
WTO and Its Dispute Settlement Mechanism---From a Developing Country Perspective, Zhejiang University Press, 2005.
- (2) HU, Jiaxiang et al
Regional Cooperation and Free Trade Agreements in Asia, Brill Publisher 2014
- (3) HU, Jiaxiang et al
Finance, Rule of Law and Development in Asia: Perspectives from Singapore, Hong Kong and Mainland China, Brill Publisher 2016
- (4) HU, Jiaxiang et al
International Economic Law and the Challenges of Economic Zones: Global Regulatory Issues and Trends, Wolters Kluwer 2019

Ve/Vm504 Solid State Physics

Fall 2018 Course Syllabus

Class Schedule

Monday & Wednesday 10:00-11:40 AM

Location: CRQ

Instructor

Prof. BAO, Hua

Room 522, JI Building

Office Hour: any time as long as I am available in the office

Email: hua.bao@sjtu.edu.cn

Teaching Assistant

Office hour: TBD Location: TBD Email: TBD

Textbook

Introduction to Solid State Physics by C. Kittel

Reference

Heat Transfer Physics by Massoud Kaviany

Introduction to Quantum Mechanics by D. J Griffiths

Course Outline

Introduction

Introduction to quantum mechanics and statistical mechanics, crystal structure, reciprocal lattice, chemical bonding

Thermal properties

Lattice vibration, lattice dynamics, phonon, heat capacity, thermal conductivity, introduction to lattice dynamics, phonon Boltzmann Transport Equation

Electrical properties

Free electron gas, tight-binding, band structure, semiconductors, introduction to ab initio calculation

Optical properties

Light-matter interaction, mechanisms and models

Grading Policy

In-class exercises 25%

Homework 20%

Course Project 20%

Final 35%

List of Topics

1. Crystal structure
2. Introduction to quantum mechanics
3. Chemical bonding
4. Introduction to statistical mechanics
5. Lattice vibration 1
6. Lattice vibration 2
7. Lattice dynamics
8. Thermal properties of solids
9. Phonon in nanostructures
10. Free electron gas
11. Band structure 1
12. Band structure 2
13. Semiconductor 1
14. Semiconductor 2
15. Introduction to semiconductor device
16. Introduction to electromagnetic theory
17. Dielectric properties
18. Optical phonon and quantum theory of light
19. Solid state energy conversion
20. Final exam review

Introduction to Banking Industry in China

NOTE:

*This course is offered to registered students only. Please do **not share** any course material (Tencent Meeting information, lecture notes, homework, references, wechat group code and etc) without my permission. Unauthorized sharing/copying might result in failing or being banned from the course.*

Time and Location:

In this semester, this course is a hybrid course offered to students offline and online via **Tencent Meeting** in the [Global Virtual Classroom Shanghai Jiao Tong University](#), and [Virtual Exchange Program of the APRU](#) (Alliance of Pacific Ring University)

- **Time:** Week 2-6: Thursdays 18:00 pm – 20:40 pm
(September 22, 29, October 6, 13 20)
- **Virtual Classroom:** Tencent Meeting
 - Meeting ID: TBA
 - PWD: TBA

Office Hour and Contact:

In this semester, I will use Tencent Meeting+ MOOC Classroom to teach an online interactive course. To facilitate the interaction during the teaching, please prepare the following:

1. Install Tencent Meeting on your computer/ipad, and make sure the camera and microphone on the computer is working properly.
2. Install wechat on your mobile phone, and register an account.
3. Register at <https://www.icourse163.com>, search course "Bank Management" by Nan Li, Shanghai Jiao Tong University and join the course (To be updated)
 - China MOOC: <http://www.icourse163.org/course/SJTU1-1457912173>
 - Or use wechat to scan the following QR code to join the course:
4. Scan the QR code using Wechat to join the Online Classroom at China MOOC.
5. Join the course wechat group by scanning the QR code (TBA)

Note:

1. **Please change you group Nickname to:**
"real name" + University + PhD/MA/Undergraduate + Year.
 2. **Please do not post anything in this group irrelevant to this course. I will kick out and ban anyone who violates this rule without warning.**
- Online Office hour is by appointment.
 - The most efficient way to contact me is by email nanli@sjtu.edu.cn, or by wechat

message in the course group, and I will usually reply in 24 hours.

- Course Website (For students need credits):
 - CANVAS: oc.sjtu.edu.cn
- Personal Website: www.nanlifinance.org

Important Due Dates:

- October 6, 6:00 pm: Class Assignment 1 Due
- October 20, 6:00 pm: Class Assignment 2 Due
- October 29, 6:00 pm: Term Paper Due

Course Objective:

This course builds on basic financial theory and the principles courses in economics to address topics that are important for managing banks in China. Upon successful completion of the course, students are expected to understand recent development in the Chinese banking industry and how banking reforms change the banking industry landscape in China. More importantly, students are expected to understand the special role of financial institutions in the Chinese economy and how to manage the risks faced by the banks in China in a rapidly changing international environment.

Prerequisites:

Students should have some background in basic macroeconomics, microeconomics, finance, algebra, differential calculus, statistics, and a disposition to keep themselves informed of current developments in the area of banking and finance in China as well as in the world.

Textbooks and References:

- Lecture notes
- Saunders and Cornett, *Financial Institutions Management: A Risk Management Approach*, 8th edition, International Edition, McGraw Hill, 2014 (FIM)
- Peter S. Rose and Sylvia C. Hudgins, *Bank Management and Financial Services*, 8th Edition, Machinery Industry Press, 2011 (BMFS)

Grading Policy:

- Class Assignment: 50%
- Presentation: 20%
- Term Paper: 20%
- Class Participation: 10%

Class Assignments

- There will be two class assignments. Each student should finish the assignments on her or his 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 essential issues related to the Chinese banking industry and apply the methods and techniques learned in the class to analyze the problems. The topic chosen by each group is subject to the approval of the lecturer. The term paper can be a *case study*, *research paper* or a *referee report* of the paper in the references. The following questions should be addressed in your term paper,

- What is the question and why it is interesting and important?
- What are your opinions? What are the arguments and empirical evidence to support your opinion?
- What are the policy implications or the implications on the risk management of Chinese banks of your research?
- Each group should prepare to present the term paper in Week 5, with 20 minutes presentation and 5 minutes Q&A. The presentation slides and term paper should be submitted before the presentation.
- The term paper should be no more than 20 pages with double spaces and fonts no smaller than 12 pt. The data source and references should be clearly and completely documented.

Class Participation

- Students are encouraged to actively participate in the class discussion. Such activities include comments and questions for lecturer in the class as well as for presenters in the group presentation.

Warning:

Plagiarism is taken very seriously. Students caught plagiarizing in class assignments and/or term paper in this course will be severely penalized according to the school regulation.

Useful Links:

- **World Bank Data**
- **China Banking and Insurance Regulatory Commission**
- **China Banking and Insurance Commission (English)**
- **The People's Bank of China**
- **The People's Bank of China (English)**
- **China Security Regulatory Commission**
- **China Security Regulatory Commission(English)**
- **Federal Reserve**
- **Federal Deposit Insurance Corporation**
- **Monetary Authority of Singapore**

Course Outline

Topic 1: Special Role of Banking Industry in China

- Lecture notes 1
- Case Study:
 - The IPO Suspension of Ant Group: FinTech and Financial Regulation
 - 2008 Credit of Crisis

References:

- FIM Chapter 1-2, 7
- **Supervisory Statistics of the Banking and Insurance Sectors 2020Q2**
- **China Banking Regulatory Commission Annual Report 2016**
- **Ancient Technique: Ri Sheng Chang Bank Draft** (CCTV National Treasure Program, video in Chinese with English subtitle)
- Naughton, Barry. Financial System. Chapter 19 in *The Chinese Economy: Transitions and Growth*. The MIT Press, page 449-483.
- Guofeng Sun, “**Banking Institutions and Banking Regulations**” (draft) in Marlene Amstad, Guofeng Sun and Wei Xiong (Eds): *The Handbook of China’s Financial System* (forthcoming in Princeton University Press)
- Amstad, Marlene and Zhiguo He, “**Chinese Bond Market and Interbank Market**” in Amstad, Marlene, Sun Guofeng and Wei Xiong (Ed): *The Handbook of China’s Financial System* (forthcoming)
- Jun Ma, “**China’s Interest Rate Liberalization**” in: Marlene Amstad, Guofeng Sun and Wei Xiong (Eds): *The Handbook of China’s Financial System* (forthcoming in Princeton University Press)

Topic 2: Monetary Policy in China and Digital Currency

- Lecture notes 2
- Case Study:
 - What is Digital RMB?
 - Cryptocurrency and CBDC

References:

- FIM Chapter 2, 12,18-20
- **FIM Appendix 1B on Monetary Policy Tools**
- **Monetary Policy Report of PBC 2018 Q2**
- **Monetary Policy Report of PBC 2018 Q2 (in Chinese)**
- **The First Set of Ren Min Bi in the People's Republic of China**, CCTV National Treasure Program
- **2018: 10th Anniversary of the Financial Crisis**, in English by google translate
- Yiping Huang, Tingting Ge and Chu Wang, “**Monetary Policy Framework and Transmission Mechanism**” (draft) in Marlene Amstad, Guofeng Sun and Wei Xiong (Eds): *The Handbook of China’s Financial System* (forthcoming in Princeton University Press)
- Tao Wang, “**Monetary Policy Instruments**” (draft) in: Marlene Amstad, Guofeng Sun and Wei Xiong (Eds): *The Handbook of China’s Financial System* (forthcoming in Princeton Press)
- Kaiji Chen and Tao Zha, “**Macroeconomic Effects of China’s Financial Policies**” (draft) in: Marlene Amstad, Guofeng Sun and Wei Xiong (Eds): *The*

Handbook of China's Financial System (forthcoming in Princeton University Press)

Topic 3: Student presentation on various topics related to banking industry in China

The Law of the Sea and China' Practice

Course Syllabus

LIU Dan, Associate Research Professor

KoGuan Law School, Shanghai Jiao Tong University

Spring, 2022

The Law of the Sea and China' Practice

Syllabus

Associate Research Professor: LIU Dan

Email: liudan2015@sjtu.edu.cn

Date: Friday, 18:00-20:20 PM

(NOTE: Assignments begin on page)

Weeks	Topic
1	I. Introduction to the Law of the Sea A. The Goals of Oceans Policy: Community and China's Interests B. Introduction to the UN Conferences on the Law of the Sea, Especially the Third UN Conference on the Law of the Sea (UNCLOS III) C. The History of the Law of the Sea and China's Policy
2	II. International Law Governing Jurisdiction Zones A. Baselines and related issues B. Territorial sovereignty a. Internal waters b. Territorial sea c. International straits d. Archipelagic waters C. China's Domestic Laws and Policies on Maritime Zones within the National Jurisdiction
3	II. International Law Governing Jurisdiction Zones D. Contiguous Zone E. Exclusive Economic Zone F. Continental Shelf G. The High Seas H. "The Area" I. China's Domestic Laws and Policies on the EEZ, Continental Shelf, and China's Mining Activities in "the Area"
4	III. Maritime Delimitation A. Article 74 (1) and 83(1) of the 1982 UNCLOS B. Case Study
5	IV. Dispute Settlement Mechanism under the 1982 UNCLOS A. Part XV of the 1982 UNCLOS B. The International Tribunal for the Law of the Sea and Other Dispute Settlement Mechanisms
6	V. Dispute Settlement Mechanism under the 1982 UNCLOS C. Case Study

The Law of the Sea and China' Practice
Assignment

Associate Research Professor: LIU Dan

Email: liudan2015@sjtu.edu.cn

Date: Friday, 18:00-20:20 PM

	Texts for Reading Assignments
Refer-ences	<p>1) Yoshifumi Tanaka, <i>The International Law of the Sea</i>, 1st Edition (Cambridge, 2012).</p> <p>2) Donald R. Rothwell and Tim Stephens, <i>The International Law of the Sea</i> (Hart Publishing Ltd, 2010)</p> <p>3) Keyuan Zou, <i>China's Marine Legal System and the Law of the Sea</i> (Leiden: Martinus Nijhoff, 2005).</p>
Caseb-ook	Louis B Soh, Erik Franckx et al, eds., <i>Cases and Materials on the Law of the Sea</i> (Leiden: Brill Nijhoff, 2014)
Weeks	Topic
1	<p style="text-align: center;">Introduction to the Law of the Sea</p> <p>A. The Goals of Oceans Policy: Community and China's Interests</p> <p>B. Introduction to the UN Conferences on the Law of the Sea, Especially the Third UN Conference on the Law of the Sea (UNCLOS III)</p> <p>C. The History of the Law of the Sea and China's Policy</p> <p><u>Reading assignment:</u></p> <p>-Yoshifumi Tanaka, 2012, pp.1-37; or, Donald R. Rothwell & Tim Stephens, 2010, pp.1-29.</p> <p>-The 1951 Anglo-Norwegian Fisheries case, available at Louis B Soh, Erik Franckx et al, eds., 2014, pp. 227-240.</p> <p><u>References:</u></p> <p>-Zou Keyuan (1998) Innocent passage for warships: The Chinese doctrine and practice, <i>Ocean Development & International Law</i>, 29:3, 195-223;</p> <p>- Zou Keyuan (2002) Navigation of foreign vessels within China's jurisdictional waters, <i>Maritime Policy & Management</i>, 29:4, 351-374.</p> <p><u>Questions:</u></p> <p>1) Are there any laws regarding territorial sea in your home country? If so, when did the laws enact? According to such law, how wide the breath of the territorial sea in your country?</p> <p>2) Please list the names of the international organizations regarding</p>

	<p>world ocean affairs, especially the law of the seas.</p> <p>3) Find and download the judgment/case summary of the 1951 Anglo-Norwegian Fisheries case from the website of the International Court of Justice (the ICJ, https://www.icj-cij.org/).</p>
2	<p style="text-align: center;">International Law Governing Jurisdiction Zones</p> <p>A. Baselines and related issues B. Territorial sovereignty a. Internal waters b. Territorial sea c. International straits d. Archipelagic waters C. China's Domestic Laws and Policies on Maritime Zones within the National Jurisdiction</p> <p>第二周、《海洋法公约》中规制海域的国际法。 基线、领海与毗连区、内水、</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 4 and Chapter 5; or, Donald R. Rothwell & Tim Stephens, 2010, Section III & IV, Chapter 4-7.</p> <p><u>References:</u> 1) China's Domestic Laws and Policies on the EEZ and the Continental Shelf (Chinese version), available at http://www.soa.gov.cn/zwgk/fwjgwywj/shfl/201508/t20150821_39618.html. 2) Recent legislation on China's mining activities in "the Area" (Chinese version), available at http://www.soa.gov.cn/zwgk/fwjgwywj/shfl/201602/t20160229_50172.html.</p>
3	<p style="text-align: center;">International Law Governing Jurisdiction Zones</p> <p>A. Contiguous Zone B. Exclusive Economic Zone C. Continental Shelf D. The High Seas E. "The Area" F. China's Domestic Laws and Policies on the EEZ, Continental Shelf, and China's Mining Activities in "the Area"</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 3&4.</p> <p><u>Questions:</u> 1) Can you distinguish the differences between the Continental Shelf and the EEZ? 2) Are there any previous/pending cases regarding maritime delimitation between your home country and the neighboring</p>

	<p>countries? If so, please list these cases and explain the final result or recent progress.</p> <p>3) What do you think of the upcoming Fukushima Radioactive Water Discharge (see https://www.theguardian.com/world/2021/aug/26/fukushima-operator-s-to-build-undersea-tunnel-to-dump-contaminated-water)?</p>
4	<p style="text-align: center;">Maritime Delimitation and Marine Pollution</p> <p>A. Protection of marine environment B. Article 74 (1) and 83(1) of the 1982 UNCLOS C. Case Study</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 8 and Chapter 6.</p> <p><u>Reference:</u> 1) Darian Ghorbi, <i>There's Something in the Water: The Inadequacy of International anti-Dumping Laws as Applied to the Fukushima Daiichi Radioactive Water Discharge</i>, 27 AM. U. INT'L L. REV. 473 (2012). 2) Xiaouu Zheng, "Does Fukushima wastewater decision violate our environmental rights?", Apr 21, 2021, available at https://www.ejiltalk.org/does-fukushima-wastewater-decision-violate-our-environmental-rights/. 3) Dan Liu & Ling Zhu, <i>Assessing China's Legislation on Compensation for Marine Ecological Damage: A Case Study of the Bohai Oil Spill</i>, Marine Policy 50 (2014), pp.18-26.</p>
5	<p style="text-align: center;">Dispute Settlement Mechanism under the 1982 UNCLOS</p> <p>A.Part XV of the 1982 UNCLOS B.The International Tribunal for the Law of the Sea and Other Dispute Settlement Mechanisms</p> <p><u>Reading assignment:</u> 1.Donald R. Rothwell & Tim Stephens, 2010, Chapter 18; or, Yoshifumi Tanaka, 2012, Chapter 13. 2.Part XV, especially Article 298 of the 1982 UNCLOS.</p>
6	<p style="text-align: center;">Dispute Settlement Mechanism under the 1982 UNCLOS</p> <p>C.Case Study</p> <p><u>Reading Assignment:</u> The South China Sea Arbitration case (Introduction to fact and background), available at the website of the Permanent Court of Arbitration (the PCA, https://pca-cpa.org/en/home/).</p>

LIU Dan

Associate Research Professor

LIU Dan is currently Associate Research Professor, Center for Polar and Deep Ocean Development, KoGuan Law School, Shanghai Jiao Tong University (<http://law.sjtu.edu.cn//TeacherDetail157.aspx>). Her research areas include public international law, the law of the sea, polar law and policy. She is currently a board member of the Chinese Society of International law, subeditor for the *Law of the Sea Review*.

Professor LIU used to serve as intern for Legal Department of the International Tribunal for the Law of the Sea (2006). Her overseas experience includes working as visiting professor at Albany Law School of the U.S (2010), visiting scholar at East Asian Institute of the National University of Singapore (2014), and visiting scholar at the Stefansson Arctic Institute of Iceland (2015-2016). Her monographs include *International Law on Marine Living Resources* (2012), *Territorial Status of Ryukyu Islands: History and International Law* (2019), and *Unmanned Maritime Systems and International Law* (2020). Her publications have appeared in journals both in English and Chinese, such as *Marine Policy*, *the Yearbook of Polar Law*, *Arctic Yearbook*, *Contemporary Law Review*, etc. She has been principle organizer of more than 20 research projects from the National Social Science Foundation of China, State Oceanic Administration of China, and China-Nordic Arctic Research Center. She also contributed to newspapers such as *the Diplomat*, *Global Times*, *Peng Pai News*, *Wen Hui Po* and *China Ocean News*. As one of the Chinese delegations, she has participated in many rounds of Track II dialogues in relation to the ocean and artic affairs. She has taught Public International Law, International Environmental law, Dispute Settlement Mechanism, the Law of the Sea, and Chinese Investment Law for LLM students and EMBA students from Europe, the U.S, and the Latin American countries. From 2009, she has also worked as coach for Jessup Term of SJTU.

Cutting Edge Issues in Comparative Literature

(theory and critical practice)

This is a graduate lecture course chiefly given by the professor to a mixed audience of both graduate students of English language and literature and Chinese language and literature who have a solid foundation of literary theory and two or more than two national literatures and other relevant fields of knowledge. The course is given in the English language chiefly, occasionally in Chinese or other languages. In this course, the history and different methodologies of comparative literature both in the West and in China will be described in a critical way, and current theoretical issues will be addressed and discussed in a comparative manner among the students. Through attending this course, students will be able to have a general picture of what comparative literature is and what world literature is so that they could write critical essays or reviews and present it in class on either theoretic issues from a comparative and global perspective or on comparative studies of two or more than two literary phenomena from an international and theoretical perspective. The final exam will be conducted by asking the students to submit a research paper longer than 3000 words in English.

Part I Theoretical Descriptions

Lecture 1. Comparative literature: Names and Definitions

Lecture 2. Major Methodologies of Comparative Literature: Historical and Contemporary

Lecture 3: The Origin and Development of Comparative Literature in the West

Lecture 4: Comparative Literature in China: Historical Retrospection and Contemporary Orientations

Lecture 5: Comparative Literature: Toward Interdisciplinary Studies

Part II Practice in Comparative Studies of Literatures: Influence and Reception

Lecture 6: Influence Studies (1): Western Trends of Literature and Modern Chinese Literature

Lecture 7: Influence Studies (2): The Critical Reception of Postmodernism in Contemporary Chinese Literature

Lecture 8: Influence Studies (3): Modern Chinese Literature in the West

Part III Practice in Comparative Studies of Literatures: Parallel Analyses

Lecture 9: Parallel Studies: Comparative Study of Man-Nature Relationships Represented in Chinese and Western Literature

Lecture 10: Parallel and General Studies: Comparative Literature: Toward the Stage of World Literature

Part IV Interdisciplinary Studies of Comparative Literature

Lecture 11: Interdisciplinary Studies: (1) Freudianism and 20th Century Chinese

Literature

Lecture 12: Interdisciplinary Studies: (2) Toward the Construction of a Postmodern Environmental Ethic

Part V Comparative Literature in an Age of Globalization

Lecture 13: Globalization and Comparative Literature

Lecture 14: Global English(es), and Global Chinese(s): Toward a New Orientation of Literary Historiography

Lecture 15: World Literature and the Dynamic Function of Translation

Students Presentation

Exam

The exam is divided into two parts: **class presentation and participation in discussions; an essay of either 3000 words in English** or 8000 Chinese characters, which could be recommended for publication if well written.

Textbook

曹顺庆主编：比较文学概论，北京：高等教育出版社，2015 年版

Major References

王宁著：比较文学：理论思考与文学阐释，上海：复旦大学出版社，2011 年版

王宁著：比较文学、世界文学与翻译研究，上海：复旦大学出版社，2014 年版

Bassnett, Susan. *Comparative Literature: A Critical Introduction*. Oxford UK & Cambridge USA: Blackwell, 1993.

Bernheimer, Charles ed. *Comparative Literature in the Age of Multiculturalism*. Baltimore and London: The Johns Hopkins University Press, 1995.

Dominguez, Cesar, Haun Saussy, Dario Villanueva. *Introducing Comparative Literature: New Trends and Applications*. London: Routledge, 2014.

Earl Miner. *Comparative Poetics: An Intercultural Essay on Theories of Literature*. Princeton, New Jersey: Princeton University Press, 1990.

Heise, Ursula K. ed. *Futures of Comparative Literature*. New York and London: Routledge, 2017.

Saussy, Haun ed. *Comparative Literature in an Age of Globalization*. Baltimore and London: The Johns Hopkins University Press, 2005.

CHN 6208 The Linguistic Landscape of China

Time and Location:

- ♦ Week 1-16: Tuesday 8:55 am – 11:40 pm, Online via (To be announced)

Zoom ID: To be announced

Zoom password: To be announced

Office Hour and Contact:

- ♦ Physical Meeting: by appointment.
- ♦ The most efficient way to contact me is by email mgerner@sjtu.edu.cn.
- ♦ A wechat group is set up for this class: (To be announced)

- ♦ Course Website:
 - o CANVAS: oc.sjtu.edu.cn
 - o MOOC: (To be announced)
 - o <https://shss.sjtu.edu.cn/faculty/mgerner>

Important Dates:

- ♦ First Day of Class: September 06, 2021
- ♦ Last Day of Class: December 26, 2021
- ♦ Due dates of written assignments:
 - o Assignment 1: October 15, 2021
 - o Assignment 2: November 19, 2021
 - o Assignment 3: December 17, 2021

Course Objective:

This module presents an overview of the more than 600 languages spoken in China, including their history, sociolinguistic settings and structural features in terms of sound, morphology and syntax. Students acquire systematic knowledge of the existing language families in China: the Sinitic ("Chinese Dialects"), Altaic, Tibeto-Burman, Tai-Kadai, Miao-Yao and Austronesian languages. They get to understand the Chinese and Western definitions of language and appreciate differences in language diversity of both China and Europe. Students will comprehend the events that shaped the linguistic landscape of Modern China: the adoption

of the speech of Beijing as lingua franca in 1913 and the spread of this lingua franca due to internal migration after the 1980s.

Prerequisites:

Previous knowledge of linguistic notions in phonetics, morphology and syntax will be advantageous, but students can catch up on the linguistic basics during the semester. They are provided a glossary of linguistic notions at the beginning of the semester.

Textbooks and References:

- ♦ Lecture notes of Matthias Gerner
Based on personal research data and other sources including:
- ♦ Diller, Anthony V. N., Jerold A. Edmondson, Yongxian Luo. (2011). *The Tai-Kadai Languages*. London: Routledge.
- ♦ Janhunen, Juha (ed.). (1998). *The Mongolic Languages*. London: Routledge.
- ♦ Norman, J. (1988). *Chinese*. Cambridge: Cambridge University Press.
- ♦ Thurgood, Graham and Randy La Polla (eds.). (2003). *The Sino-Tibetan Languages*. London: Routledge.
- ♦ (...)

Grading Policy:

- ♦ Final Exam: 60%
The final exam controls the systematic acquisition of knowledge of the language situation in China.
- ♦ Assignments: 30%
Students work on three homework assignments, each covering a set of linguistic data
- ♦ Class Participation: 10%
Students are graded for class attendance and for asking pertinent questions.

Course Outline:

The course will be taught in 16 lectures organized as follows:

1. Sociolinguistic Introduction
2. The Sinitic Languages: Mandarin, Jin and Gan
3. The Sinitic Languages: Wu and Min
4. The Sinitic Languages: Xiang, Hakka and Yue
5. Altaic Languages: Mongolic
6. Altaic Languages: Tungusic
7. Altaic Languages: Turkic
8. Tibeto-Burman: Bodish
9. Tibeto-Burman: Loloish

10. Tibeto-Burman: Qiangic
11. Tai-Kadai: Kam, Sui and Zhuang
12. Tai-Kadai: Tai, Hlai, Be
13. Miao-Yao: Miao
14. Miao-Yao: Yao
15. Austronesian (Taiwan)
16. Conclusion

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

Authors: ZHANG Li, SHENG Yue

Tsing Hua University Press

《学术英语写作与演讲》

张荔 盛越

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%



PHILOSOPHY, TECHNOLOGY, AND SOCIETY

PHIL6319

COURSE SYLLABUS

NICOLA LIBERATI

Associate Professor, Shanghai Jiao Tong University,
Department of Philosophy

Email: nicola2020@sjtu.edu.cn

General course information

Course basic information			
Course Name	Philosophy, technology, and society		
Credits	2	Teaching Hours	32 hours
Semester	Fall	Cross-semester?	No
Course Category	Specialized course	Course Type	Full-time students
Instruction Language	英文 English	Teaching Method	In-class teaching
Grade	Letter grading	Exam Method	Oral exam, written exam, and participation in class
Prerequisites	None		
School	School of Humanities		
Subject	Philosophy		
Person in charge	Name	School Department and	Contact
	Nicola Liberati	School of Humanities; Department of Philosophy	Nicola2020@sjtu.edu.cn

1 Course description

This course endeavors to empower students with the ability to approach topics from diverse angles, guided by a philosophical framework. Its primary objective lies in providing an introductory exploration of the philosophy of technology, serving as a gateway to comprehending the evolution of novel digital advancements within our modern society.

By presenting diverse perspectives on the implementation of technologies, this course equips students with a range of analytical frameworks. These frameworks enable students to critically examine and make sense of the complex societal landscape in which they reside from different perspectives and attitudes.

The lectures within this course have been thoughtfully crafted to cultivate dynamic interactions between the professor and the students, nurturing an environment conducive to the development of their critical perspectives. Through engaging discussions with both the instructor and their peers, students will have ample opportunities to refine their ability to analyze and evaluate, enabling them to pose thought-provoking questions and offer well-founded responses.

By the culmination of this course, students will have honed their capacity for systematic and critical thinking, equipping them with the skills necessary to navigate intellectual inquiries with

depth and precision. Moreover, they will have gained familiarity with the prominent themes and notable figures within the realm of philosophy of technology, thereby empowering them to discern the societal implications that underlie the application of these ideas.

Ultimately, this transformative educational journey will bestow upon students the capability to view the world through an informed and contemplative lens. Armed with an enhanced understanding of the philosophy of technology, they will possess a discerning perspective, capable of shedding light on the intricate connections between technology, humanity, and the broader social fabric.

2 References

The course is based on three texts:

- Fallman, D. A different way of seeing: Albert Borgmann's philosophy of technology and human-computer interaction. *AI & Soc* 25, 53–60 (2010). <https://doi.org/10.1007/s00146-009-0234-1>
- Ihde, Don. 1990. *Technology and the Lifeworld. From Garden to Earth*. Bloomington: Indiana University.
- Turkle, Sherry. 2015. *Reclaiming Conversation: The Power of Talk in a Digital Age*. Penguin Press.

Additional reference for more information about the empirical turn with relation to postphenomenology:

- Verbeek, P.P. (2021). The Empirical Turn. In: S. Vallor (ed.), *The Oxford Handbook of Philosophy of Technology*. Oxford: Oxford University Press. doi.org/10.1093/oxfordhb/9780190851187.013.4

Additional texts will be provided in relation to the interest of the students in order to focus on specific aspects.

3 Course objectives

This course sets out to achieve the following objectives:

1. Familiarize students with fundamental concepts in the field of philosophy of technology by exploring the ideas put forth by esteemed scholars such as Borgmann, Turkle, and postphenomenology. Through a comprehensive study of their works, students will gain a solid grounding in the foundational principles that underpin this discipline.
2. Develop a basic proficiency in analyzing and critically assessing digital technologies, including virtual reality (VR), augmented reality (AR), artificial intelligence (AI), and robotics, from a philosophical standpoint. By employing a philosophical lens, students will

acquire the necessary tools to evaluate the implications and impacts of these technologies, allowing for a deeper understanding of their societal and ethical dimensions.

3. Equip students with the skills to articulate and defend their own perspectives while engaging in meaningful and fruitful discussions with individuals who hold differing viewpoints. This objective seeks to foster an environment where respectful dialogue and intellectual exchange flourish, enabling students to refine their ability to communicate and advocate for their positions effectively.
4. Enable students to employ philosophical concepts as a lens through which they can examine and address the complex challenges present in society. By applying philosophical frameworks to real-world scenarios, students will cultivate a capacity for critical analysis and gain insights into the profound interplay between technology and societal dynamics.

By attaining these objectives, students will emerge from this course with a solid foundation in the philosophy of technology, enabling them to navigate the intricate landscape of digital advancements with a nuanced and discerning perspective. They will possess the necessary skills to engage in informed discussions, offer compelling arguments, and apply philosophical concepts to grapple with the complex issues that shape our rapidly evolving society.

4 Assessment

The assessment for this course is comprised of the following components: 35% will be allocated to class participation, evaluating students' active engagement and involvement in discussions. An additional 35% will be dedicated to a comprehensive written exam, testing their understanding of course materials. The remaining 30% will be based on an oral presentation, allowing students to showcase their knowledge and communication skills.

4.1 Participation

Participation is essential since the course is meant to generate discussion. For this reason, participation is evaluated for 35% of the final grade.

4.2 Written exam

The written exam will be a set of a few open questions to be answered. More information on the exam will be provided during the course.

4.3 Oral presentation

The class will be divided into groups, and each group will have to present a topic to the class. The quality of the presentation and the discussion that emerge are the criteria used to evaluate the exam. More information on the exam will be provided during the course.

5 Structure of the course

Introduction	Phil framework 1	Phil framework 2	Phil framework 3	Applications	Conclusions	Exams
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5.1 Section 1: Introduction

The initial session will commence with introductions, providing an opportunity for both students and the professor to acquaint themselves. A comprehensive overview of the course will follow, encompassing its key topics, methodology, syllabus, exams, and grading system. Emphasis will be placed on the paramount significance of active participation throughout the course. Students will be encouraged to actively engage in discussions, contributing their unique perspectives and insights. The significance of their involvement will be underscored, highlighting how active participation fosters a dynamic and enriching learning environment.

Hours: 2

5.2 Section 2: Philosophical framework 1 - Borgmann

The course commences with an introduction to the philosophy of technology, approaching it from a critical standpoint regarding the utilization of digital technologies. The initial focus centers on the works of Albert Borgmann, which will be examined in a sequential manner, unveiling his ideas in a step-by-step fashion. Borgmann's insights serve as a foundation for exploring the philosophical underpinnings surrounding technology and its societal implications. By delving into his writings, students will gain a deeper understanding of the intricate relationship between humanity and the digital landscape, laying the groundwork for further philosophical exploration in the realm of technology.

Hours: 6

5.3 Section 3: Philosophical framework 2 - Turkle

The course now proceeds to introduce the second thinker, Sherry Turkle, who adopts a highly critical stance towards "social" technologies. These two forthcoming lessons will be dedicated to a comprehensive exploration of Turkle's ideas. With a keen focus on the implications of digital technologies on social interactions and human relationships, Turkle's insights provide valuable perspectives for critical analysis. Through these lessons, students will delve deeper into the intricate landscape of "social" technologies, uncovering the complexities and nuances that underlie their impact on society. By examining Turkle's work, a richer understanding of the multifaceted dynamics between technology and human connection will be fostered.

Hours: 6

5.4 Section 4: Philosophical framework 3 - Postphenomenology

The course now transitions to the introduction of a second group of philosophers who hold a more optimistic perspective on the utilization of technologies through the introduction of phenomenology and postphenomenology. In particular, the focus shifts towards postphenomenologists such as Don Ihde and Peter-Paul Verbeek. These philosophers provide valuable insights into the intricate relationship between humans and technology, exploring the ways in which technologies mediate our perception and interactions with the world. Through an in-depth examination of their work, students will gain a nuanced understanding of the positive aspects and ethical considerations surrounding technology use. By engaging with the philosophies of Ihde and Verbeek, the course aims to present a balanced and comprehensive exploration of the philosophy of technology.

Hours: 6

5.5 Section 5: Analysis of specific digital technologies

Introduction to digital technologies like ChatGPT, AR, and Metaverse and the applications of the philosophies of Borgmann, Turkle, and postphenomenology to these technologies.

Hours: 4

5.6 Section 6: Concluding remarks

This section is related to the concluding remarks connecting the different philosophers and the kind of approach which is possible to have in philosophy of technology in relation to the implementation of digital technologies in society.

Hours: 2

5.7 Section 7: Oral exam

The oral exam is related to the presentations and the discussion which emerges.

Hours: 4

5.8 Section 7: Written exam

Two hours for the written exam.

Hours: 2

Syllabus

The Sustainable Development Goals of the United Nations

Course Code	ENVR8163	Teaching Hours	32	Credits	2
Course Name	联合国可持续发展目标				
	The Sustainable Development Goals of the United Nations				
Instruction Language	English				
School	China-UK Low Carbon College				
Instructors	Name	Title	Department	E-mail	
	Yuquan Zhang	Associate Professor	China-UK Low Carbon College	yqwzhang@sjtu.edu.cn	
Course Description	<p>Aiming to spread the knowledge of the Sustainable Development Goals (SDG) of the United Nations and to evoke the interest in international governance that promotes exchanges between different cultural backgrounds, this course provides the international audience a China perspective on SDGs. For each SDG, this course will introduce the basics, review the development status of China’s relevant work, elaborate on case studies of China or other countries and regions, and discuss the potential challenges.</p> <p>The students are expected to master the definitions of SDGs, gain an understanding of China’s work in the arena of sustainable development, and develop analytical skills under a multi-faceted SDG framework. Also, the students are encouraged to brainstorm solutions that will help realize the SDGs with their own expertise. The UN SDGs were adopted in 2015, consisting of 17 SDGs that cover the societal, economic, and environmental challenges. Specifically, the SDGs include 1) no poverty, 2) no hunger, 3) good health and well-being, 4) quality education, 5) gender equality, 6) clean water and sanitation, 7) affordable and clean energy, 8) decent work and economic growth, 9) industry, innovation and infrastructure, 10) reduced inequalities, 11) sustainable cities and communities, 12) responsible consumption and production, 13) climate action, 14) life below water, 15) life on land, 16) peace, justice and strong institutions, and 17) partnerships for the goals.</p>				
Schedules	Content		Hours	Format	Instructor
	SDG1 No Poverty 1. Overview of UN SDGs 2. SDG1 and the Status of World Poverty 3. China's Anti-Poverty Efforts		2	Lecture & Discussion	Yuquan ZHANG
	SDG2 No Hunger 1. The Importance of Food Security 2. China's Agricultural Sector 3. Food Waste Reduction and Utilization		2	Lecture & Discussion	Yuquan ZHANG
	SDG3 Good Health and Well-Being 1. Fighting against Diseases Worldwide 2. China's Public Health Development		2	Lecture & Discussion	Yuquan ZHANG

	3. Case Study of Shenzhen			
	SDG4 Quality Education & SDG5 Gender Equality 1. Definitions of SDG4 and SDG5 2. Education in China & Girls 3. Job Market and Workplace & Gender	2	Lecture & Discussion	Yuquan ZHANG
	SDG6 Clean Water and Sanitation 1. SDG6 and Water Resources 2. China's Water Treatment 3. Case Studies of Shanghai and Hong Kong	2	Lecture & Discussion	Yuquan ZHANG
	SDG7 Affordable and Clean Energy 1. SDG7 and New Energy Development 2. China's Renewable Energy Sector 3. Outlook of New Energy	2	Lecture & Discussion	Yuquan ZHANG
	SDG8 Decent Work and Economic Growth 1. World Economy Status 2. China's Economic Status and Employment 3. Challenges Facing Economic Growth and Job Market	2	Lecture & Discussion	Yuquan ZHANG
	SDG9 Industry, Innovation and Infrastructure 1. World Industries Status 2. China's Industries, Innovation and Infrastructure 3. Challenges Facing Innovation	2	Lecture & Discussion	Yuquan ZHANG
	SDG10 Reduced Inequalities 1. Definition of SDG10 and International Inequalities 2. Societal Challenges Facing the United States 3. Future Development	2	Lecture & Discussion	Yuquan ZHANG
	SDG11 Sustainable Cities and Communities 1. World City Development Status 2. Low Carbon Transportation and Buildings 3. Outlook and Challenges	2	Lecture & Discussion	Yuquan ZHANG
	SDG12 Responsible Consumption and Production 1. SDG12 and World Development Status 2. Case Studies on China's Sustainable Consumption and Production	2	Lecture & Discussion	Yuquan ZHANG

	3. Future Challenges			
	SDG13 Climate Action 1. SDG13 and International Efforts Made 2. China's Climate Action 3. Building Climate Resilience	2	Lecture & Discussion	Yuquan ZHANG
	SDG14 Life below Water 1. SDG14 and International Efforts Made 2. Protecting the Oceanic Ecosystems 3. Challenges for Ocean Protection	2	Lecture & Discussion	Yuquan ZHANG
	SDG15 Life on Land 1. SDG15 and International Efforts Made 2. Protecting Terrestrial Ecosystems 3. Challenges for Biodiversity Conservation	2	Lecture & Discussion	Yuquan ZHANG
	SDG16 Peace, Justice and Strong Institutions & SDG17 Partnerships for the Goals 1. Definitions of SDG16 and SDG17 2. Legal Institutions, Protection and Assistance 3. Global Partnerships and Governance	2	Lecture & Discussion	Yuquan ZHANG
	Revisiting SDGs 1. Review of SDG1 to SDG17 2. Discovering the SDG Framework 3. Concluding the SDG Course	2	Lecture & Discussion	Yuquan ZHANG
Grading Policy	1. Attendance (10%) 2. Active participation in and contribution to classroom discussion (30%) 3. A term paper in group effort (suggesting 3 members; length not exceeding 2000 words, the sum of figures and tables not exceeding 5) (60%)			
Textbooks & References	Xu, Z., Chau, S.N., Chen, X. et al. Assessing progress towards sustainable development over space and time. <i>Nature</i> 577, 74–78 (2020). https://doi.org/10.1038/s41586-019-1846-3 Sachs, J.D., Schmidt-Traub, G., Mazzucato, M. et al. Six Transformations to achieve the Sustainable Development Goals. <i>Nat Sustain</i> 2, 805–814 (2019). https://doi.org/10.1038/s41893-019-0352-9 De Neve, J.E., Sachs, J.D. The SDGs and human well-being: a global analysis of synergies, trade-offs, and regional differences. <i>Sci Rep</i> 10, 15113 (2020). https://doi.org/10.1038/s41598-020-71916-9 Friedman, J., York, H., Graetz, N. et al. Measuring and forecasting progress towards the education-related SDG targets. <i>Nature</i> 580, 636–639 (2020). https://doi.org/10.1038/s41586-020-2198-8 Carley, S., Konisky, D.M. The justice and equity implications of the clean energy transition. <i>Nat Energy</i> 5, 569–577 (2020). https://doi.org/10.1038/s41560-020-0641-6 Brodie Rudolph, T., Ruckelshaus, M., Swilling, M. et al. A transition to sustainable ocean governance. <i>Nat Commun</i> 11, 3600 (2020). https://doi.org/10.1038/s41467-020-17410-2			

Syllabus

Entrepreneurship, Corporate Governance and Shareholder Remedies in China

Course Instructor: Prof. Wei Shen

Email: shenwei@sjtu.edu.cn

Website: <http://law.sjtu.edu.cn/TeacherDetail126.aspx>

Mode of Teaching: Asynchronous + Synchronous

MOOC Website:

<https://www.icourse163.org/course/SJTU-1003537004?tid=1461627474#/info>

Tutorial Time:

By email or by appointment.

Course Syllabus:

1. Business vehicles
2. Nature of companies
3. Piercing the corporate veil
4. Promoters and pre-incorporation contracts
5. Corporate constitution
6. Division of corporate powers
7. Directors' duties

8. Corporate contracting and protection of persons dealing with a company
9. Shareholder remedies
10. Corporate finance and venture capital
11. Entrepreneurship and innovation

Grading Policy:

Essay: 100%

Students need to write an essay (7,000-8,000 words including footnotes). **The due date is December 30, 2022.**

Students need to do a presentation to introduce the topics in the last class.



LLM Program in Chinese Law

Course Information Sheet

Academic Year: 2022-2023	Semester: First	Instructor: Jiaxiang Hu
Instructor's Contact Information: Phone: 62934638 Email: jxhu@sjtu.edu.cn Website: Office: Office Hour: available upon appointment Please do not use email for substantive issue discussion—attend the online class and raise your questions.		
Schedule: The class meets (Monday) from 6:00 to 8:20 p.m. in Weeks 1-11 at Zoom Classroom.		
Course/Lecture Name: Chinese Foreign Trade Law		
Course/Lecture Description: This course provides a focused treatment and analysis of the major legal, policy and business aspects of foreign trade in China. With respect to China's regulation of foreign trade, areas covered include: trade in goods, trade in services, protection of intellectual property rights in trading, China's participation in the WTO and China's commitments under the multilateral trading system, WTO dispute settlement mechanism and the relevant disputes concerning China. Specifically, China's regulations on foreign trade include tariff regulation and non-tariff regulation, trade remedies including antidumping measures, countervailing measures, safeguard measures. With the challenges confronting each WTO Member, how to reform the current multilateral trade regime is also an issue which deserves special attention.		
Course Syllabus or Outline: Unit One A Brief Introduction to the Legal System of China Unit Two General Principles of Chinese Foreign Trade Law Unit Three Understanding Foreign Trade Unit Four Law Governing International Transactions of Goods Unit Five Government Regulation of Foreign Trade Unit Six Trade-related Intellectual Property Right Protection Unit Seven Foreign Trade Injury Investigation and Relief Unit Eight Foreign Trade Promotion and Legal Liabilities		

Reading Materials and Resources:

1. Textbook

Hu Jiaxiang: WTO and Its Dispute Settlement Mechanism, Zhejiang University Press, 2005

2. Articles

Hu Jiaxiang: The Role of International Law in the Development of WTO

Hu Jiaxiang: The Ambiguous Name and the Possible Redefining of a Developing Country in the WTO

Hu Jiaxiang: Closer Integration, Controversial Rules: Issues Arising from the CEPA between Mainland China, Hong Kong, and Macao

Hu Jiaxiang: Market Access or Market Restrictions – Analysis on the Regulations of PRC on Administration of Foreign-Funded Banks

Hu Jiaxiang: To Be or Not to Be---A Question to the United States---On the Countervailing Measures to Those Non-Market Economies

Hu Jiaxiang: The Role of WTO Law in the Construction of the Chinese Legal System

Hu Jiaxiang: The Role of Technological Neutrality Principle in the Development of WTO Rules

Hu Jiaxiang: Shanghai Free Trade Pilot Zone, the Model for Future China?

Hu Jiaxiang: A Small Difference in Wording, but a Big Difference in Rule-making----A Retrospective and Prospective View on the Development of China's Economic Zones

Hu Jiaxiang: The WTO Dispute Settlement System at Twenty Years: From the Perspective of the WTO Compensation Mechanism

Hu Jiaxiang & Jenny Huang: Dispute Resolution Mechanisms and Organizations in the Implementation of "One Belt, One Road" Initiative: Whence and Whither, Journal of World Trade, No.5, 2018

Hu Jiaxiang et al: Perspectives on Chinese Business and Law (intersentia Cambridge-Antwerp-Portland), 2018

3. Websites:

www.wto.org

4. Other reading materials and resources:

WTO cases

Eligibility:

1. All enrolled LLM candidates are admitted in this course;
2. Foreign exchange students and Chinese law students may be admitted in this course.

Recordings:

Recordings of classes are not permitted under any circumstances without permission of the instructor.

Examination:

1. **Final examination.** A thesis with no fewer than twenty pages of double-space lines is required. The student may choose any subject concerned with the knowledge learned in the class. Case analysis will be encouraged.
2. **Mid-semester examination.** There is one mid-semester examination with some questions either in oral or written form.

Grading:

Classroom performance: 20%

Mid-semester examination: 20%

Final Examination: 60%

Grading Scale:

A 90-100 (Excellent)

B 80-89 (Good)

C 70-79 (Satisfactory)

D 60-69 (Poor) F 0-59 (Failure)
<p>Academic Behavior and Honesty:</p> <p>During exams, exchange of information with others is unacceptable. So is the use of notes or other materials, unless explicitly authorized. Anyone suspected of violating these guidelines will be charged with academic dishonesty and subject to SJTU's disciplinary procedures.</p>
<p>Class Attendance and Participation:</p> <ol style="list-style-type: none"> 1. An attendance roster is kept, and students are expected to attend all class sessions on time and as scheduled. 2. Active student participation is an essential part of this course. Students should come to class prepared to discuss the assigned readings in a thoughtful, productive, and civil manner. You should be ready to ask and answer questions on the assigned readings. You need to participate actively in the class, but you should not attempt to dominate class discussion. 3. Students often disagree with each other and with the instructor. We encourage an atmosphere in which we are free to challenge and criticize each other's arguments, but all of us should be respectful and civil in our disagreements. 4. Class attendance and participation will not be formally graded.

Reference List for Further Reading

- (1) HU, Jiaxiang
WTO and Its Dispute Settlement Mechanism---From a Developing Country Perspective, Zhejiang University Press, 2005.
- (2) HU, Jiaxiang et al
Regional Cooperation and Free Trade Agreements in Asia, Brill Publisher 2014
- (3) HU, Jiaxiang et al
Finance, Rule of Law and Development in Asia: Perspectives from Singapore, Hong Kong and Mainland China, Brill Publisher 2016
- (4) HU, Jiaxiang et al
International Economic Law and the Challenges of Economic Zones : Global Regulatory Issues and Trends, Wolters Kluwer 2019

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

The Law of the Sea and China' Practice

Course Syllabus

LIU Dan, Associate Research Professor

KoGuan Law School, Shanghai Jiao Tong University

Spring, 2022

The Law of the Sea and China' Practice

Syllabus

Associate Research Professor: LIU Dan

Email: liudan2015@sjtu.edu.cn

Date: Friday, 18:00-20:20 PM

(NOTE: Assignments begin on page)

Weeks	Topic
1	I. Introduction to the Law of the Sea A. The Goals of Oceans Policy: Community and China's Interests B. Introduction to the UN Conferences on the Law of the Sea, Especially the Third UN Conference on the Law of the Sea (UNCLOS III) C. The History of the Law of the Sea and China's Policy
2	II. International Law Governing Jurisdiction Zones A. Baselines and related issues B. Territorial sovereignty a. Internal waters b. Territorial sea c. International straits d. Archipelagic waters C. China's Domestic Laws and Policies on Maritime Zones within the National Jurisdiction
3	II. International Law Governing Jurisdiction Zones D. Contiguous Zone E. Exclusive Economic Zone F. Continental Shelf G. The High Seas H. "The Area" I. China's Domestic Laws and Policies on the EEZ, Continental Shelf, and China's Mining Activities in "the Area"
4	III. Maritime Delimitation A. Article 74 (1) and 83(1) of the 1982 UNCLOS B. Case Study
5	IV. Dispute Settlement Mechanism under the 1982 UNCLOS A. Part XV of the 1982 UNCLOS B. The International Tribunal for the Law of the Sea and Other Dispute Settlement Mechanisms
6	V. Dispute Settlement Mechanism under the 1982 UNCLOS C. Case Study

The Law of the Sea and China' Practice
Assignment

Associate Research Professor: LIU Dan
Date: Friday, 18:00-20:20 PM

Email: liudan2015@sjtu.edu.cn

	Texts for Reading Assignments
Refer-ences	<p>1) Yoshifumi Tanaka, <i>The International Law of the Sea</i>, 1st Edition (Cambridge, 2012).</p> <p>2) Donald R. Rothwell and Tim Stephens, <i>The International Law of the Sea</i> (Hart Publishing Ltd, 2010)</p> <p>3) Keyuan Zou, <i>China's Marine Legal System and the Law of the Sea</i> (Leiden: Martinus Nijhoff, 2005).</p>
Caseb-ook	Louis B Soh, Erik Franckx et al, eds., <i>Cases and Materials on the Law of the Sea</i> (Leiden: Brill Nijhoff, 2014)
Weeks	Topic
1	<p style="text-align: center;">Introduction to the Law of the Sea</p> <p>A. The Goals of Oceans Policy: Community and China's Interests</p> <p>B. Introduction to the UN Conferences on the Law of the Sea, Especially the Third UN Conference on the Law of the Sea (UNCLOS III)</p> <p>C. The History of the Law of the Sea and China's Policy</p> <p><u>Reading assignment:</u></p> <p>-Yoshifumi Tanaka, 2012, pp.1-37; or, Donald R. Rothwell & Tim Stephens, 2010, pp.1-29.</p> <p>-The 1951 Anglo-Norwegian Fisheries case, available at Louis B Soh, Erik Franckx et al, eds., 2014, pp. 227-240.</p> <p><u>References:</u></p> <p>-Zou Keyuan (1998) Innocent passage for warships: The Chinese doctrine and practice, <i>Ocean Development & International Law</i>, 29:3, 195-223;</p> <p>- Zou Keyuan (2002) Navigation of foreign vessels within China's jurisdictional waters, <i>Maritime Policy & Management</i>, 29:4, 351-374.</p> <p><u>Questions:</u></p> <p>1) Are there any laws regarding territorial sea in your home country? If so, when did the laws enact? According to such law, how wide the breath of the territorial sea in your country?</p> <p>2) Please list the names of the international organizations regarding</p>

	<p>world ocean affairs, especially the law of the seas.</p> <p>3) Find and download the judgment/case summary of the 1951 Anglo-Norwegian Fisheries case from the website of the International Court of Justice (the ICJ, https://www.icj-cij.org/).</p>
2	<p style="text-align: center;">International Law Governing Jurisdiction Zones</p> <p>A. Baselines and related issues B. Territorial sovereignty a. Internal waters b. Territorial sea c. International straits d. Archipelagic waters C. China's Domestic Laws and Policies on Maritime Zones within the National Jurisdiction</p> <p>第二周、《海洋法公约》中规制海域的国际法。 基线、领海与毗连区、内水、</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 4 and Chapter 5; or, Donald R. Rothwell & Tim Stephens, 2010, Section III & IV, Chapter 4-7.</p> <p><u>References:</u> 1) China's Domestic Laws and Policies on the EEZ and the Continental Shelf (Chinese version), available at http://www.soa.gov.cn/zwgk/fwjgwywj/shfl/201508/t20150821_39618.html. 2) Recent legislation on China's mining activities in "the Area" (Chinese version), available at http://www.soa.gov.cn/zwgk/fwjgwywj/shfl/201602/t20160229_50172.html.</p>
3	<p style="text-align: center;">International Law Governing Jurisdiction Zones</p> <p>A. Contiguous Zone B. Exclusive Economic Zone C. Continental Shelf D. The High Seas E. "The Area" F. China's Domestic Laws and Policies on the EEZ, Continental Shelf, and China's Mining Activities in "the Area"</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 3&4.</p> <p><u>Questions:</u> 1) Can you distinguish the differences between the Continental Shelf and the EEZ? 2) Are there any previous/pending cases regarding maritime delimitation between your home country and the neighboring</p>

	<p>countries? If so, please list these cases and explain the final result or recent progress.</p> <p>3) What do you think of the upcoming Fukushima Radioactive Water Discharge (see https://www.theguardian.com/world/2021/aug/26/fukushima-operator-s-to-build-undersea-tunnel-to-dump-contaminated-water)?</p>
4	<p style="text-align: center;">Maritime Delimitation and Marine Pollution</p> <p>A. Protection of marine environment B. Article 74 (1) and 83(1) of the 1982 UNCLOS C. Case Study</p> <p><u>Reading assignment:</u> Yoshifumi Tanaka, 2012, Chapter 8 and Chapter 6.</p> <p><u>Reference:</u> 1) Darian Ghorbi, <i>There's Something in the Water: The Inadequacy of International anti-Dumping Laws as Applied to the Fukushima Daiichi Radioactive Water Discharge</i>, 27 AM. U. INT'L L. REV. 473 (2012). 2) Xiaouu Zheng, "Does Fukushima wastewater decision violate our environmental rights?", Apr 21, 2021, available at https://www.ejiltalk.org/does-fukushima-wastewater-decision-violate-our-environmental-rights/. 3) Dan Liu & Ling Zhu, <i>Assessing China's Legislation on Compensation for Marine Ecological Damage: A Case Study of the Bohai Oil Spill</i>, Marine Policy 50 (2014), pp.18-26.</p>
5	<p style="text-align: center;">Dispute Settlement Mechanism under the 1982 UNCLOS</p> <p>A. Part XV of the 1982 UNCLOS B. The International Tribunal for the Law of the Sea and Other Dispute Settlement Mechanisms</p> <p><u>Reading assignment:</u> 1. Donald R. Rothwell & Tim Stephens, 2010, Chapter 18; or, Yoshifumi Tanaka, 2012, Chapter 13. 2. Part XV, especially Article 298 of the 1982 UNCLOS.</p>
6	<p style="text-align: center;">Dispute Settlement Mechanism under the 1982 UNCLOS</p> <p>C. Case Study</p> <p><u>Reading Assignment:</u> The South China Sea Arbitration case (Introduction to fact and background), available at the website of the Permanent Court of Arbitration (the PCA, https://pca-cpa.org/en/home/).</p>

LIU Dan

Associate Research Professor

LIU Dan is currently Associate Research Professor, Center for Polar and Deep Ocean Development, KoGuan Law School, Shanghai Jiao Tong University (<http://law.sjtu.edu.cn//TeacherDetail157.aspx>). Her research areas include public international law, the law of the sea, polar law and policy. She is currently a board member of the Chinese Society of International law, subeditor for the *Law of the Sea Review*.

Professor LIU used to serve as intern for Legal Department of the International Tribunal for the Law of the Sea (2006). Her overseas experience includes working as visiting professor at Albany Law School of the U.S (2010), visiting scholar at East Asian Institute of the National University of Singapore (2014), and visiting scholar at the Stefansson Arctic Institute of Iceland (2015-2016). Her monographs include *International Law on Marine Living Resources* (2012), *Territorial Status of Ryukyu Islands: History and International Law* (2019), and *Unmanned Maritime Systems and International Law* (2020). Her publications have appeared in journals both in English and Chinese, such as *Marine Policy*, *the Yearbook of Polar Law*, *Arctic Yearbook*, *Contemporary Law Review*, etc. She has been principle organizer of more than 20 research projects from the National Social Science Foundation of China, State Oceanic Administration of China, and China-Nordic Arctic Research Center. She also contributed to newspapers such as *the Diplomat*, *Global Times*, *Peng Pai News*, *Wen Hui Po* and *China Ocean News*. As one of the Chinese delegations, she has participated in many rounds of Track II dialogues in relation to the ocean and artic affairs. She has taught Public International Law, International Environmental law, Dispute Settlement Mechanism, the Law of the Sea, and Chinese Investment Law for LLM students and EMBA students from Europe, the U.S, and the Latin American countries. From 2009, she has also worked as coach for Jessup Term of SJTU.

Automation and System Control

<div>*课程简介 (English) Course Description</div>	<div>This course is to give students a knowledge of fundamental principles of automation & system control and some classical control methods and modern control methods. Course contents include basic concepts of control systems, mathematical abstraction and state model representation of real dynamic systems, characteristics of feedback control systems, stability of linear feedback systems, root locus control methods for dynamic systems, frequency domain control methods for dynamic systems, system stability in the frequency domain, model predictive control methods, etc. The objective of the course is to help the students achieve the following aspects: (1) study how to model dynamic systems via knowledge on real analysis, Fourier & Laplace transform, matrix analysis, stochastic processes etc. (2) get familiar with control system concepts such as observability & controllability; (3) master how to use frequency domain methods, linear state feedback methods to design control systems that satisfy certain requirements; (4) have a knowledge of some advanced control methods such as model predictive control methods.</div>					
<div>*教学大纲 (English) Syllabus</div>	<div><div><div>● study how to model dynamic systems via knowledge on real analysis, Fourier & Laplace transform, matrix analysis, stochastic processes etc.</div><div>● get familiar with control system concepts such as observability & controllability;</div><div>● master how to use frequency domain methods, linear state feedback methods to design control systems that satisfy certain requirements;</div><div>● have a knowledge of some advanced control methods such as model predictive control methods.</div></div></div>					
	教学内容 Teaching content	学时 Teaching hours	教 学 方 式 Teaching method	作业及要求 Assignments	基本要求 Basic requirement	考查方式 Evaluation ways
	Concepts and mathematical modeling of control systems	8	Lectures/ Practice	Canvas	Able to model dynamics systems via mathematics	Assignments
	Frequency domain methods	8	Lectures/ Practice	Canvas	Design control systems via these methods	Assignments
	Linear state feedback methods; observability and controllability	8	Lectures/ Practice	Canvas	Design control systems via these methods	Assignments
	Advanced control methods such as model predictive control methods	8	Lectures/ Practice	Canvas	Understand the spirit of the model predictive control method	Assignments
<div>*课程要求 (English) Requirements</div>	<div>Class performance 40% Project performance 60%</div>					

Politics and International Relations Theory

Ruolin Su
119 Xinjian Building, School of International and Public Affairs
Office hours: by appointment
Email: ruolinsu@sjtu.edu.cn

Purpose of the Course:

This course is an introductory course, surveying major issues in international politics. The first section of the course provides an overview of some central concepts and main theoretical approaches to understand international politics. The second section of the course applies these theories to various issues pertaining to international relations. Topics will include international security, the causes of war, international political economy, the role of international law and international institutions in international relations, prospects for international cooperation to resolve environmental problems, and nuclear proliferation. The purpose of this course is to introduce students to the field of international relations, so no prerequisite course is required.

Course Assignments:

The assignments for this course are:

- (1) reading international news on a daily basis
- (2) active participation in class discussion and making one in-class presentation. You are expected not only to attend class, but also to do all of the assigned readings in advance and to come to class prepared to participate actively in discussion. In addition, each student is required once during the semester to bring to section a newspaper or magazine article that is relevant to the issues covered in that week's lectures or readings. You should be prepared to discuss briefly the ways in which the event or issue raised in the article relates to the theoretical arguments or other topics for that week.
- (3) one group project (**Scheduled DECEMBER 12**). You are required to do a group project on globalization or regionalism and present your findings on that week.
- (4) one in-class open book midterm (**Scheduled OCTOBER 24**)
- (5) a comprehensive final exam. The exams will cover material presented in lectures and the readings for this course. The lectures and readings will take up many of the same issues, but the lectures often will cover material that is not addressed in the readings.

Course Requirements

Lectures, Course Website, and WeChat Group

The Canvas website: I will post topics to be covered in each lecture, course announcements, readings not in the books available for purchase, supplemental materials, and links to other relevant resources online.

The Course WeChat group will be used to send out announcements. Please be sure that you are receiving these messages. If you are not, tell us and we will add you to the list.

Readings

Required readings are listed below each topic on the lecture and reading schedule.

Grades:

Your performance on the exams and during class will determine your final grade. They will be weighted as follows:

Attendance and Participation: 10%
Group Project: 10%
Presentation: 20%
Midterm Exam: 20%
Final Exam: 40%

NOTE: ACADEMIC INTEGRITY

Plagiarism, use of another person's work, misconduct during an examination, prior possession of an examination, and submission of work used in another course are examples of violations of the academic code of integrity.

Any student who violates the code will receive a failing grade for the work in question.

Lecture Topics

1. Introduction, Concepts, and Methods

2. Realism

3. Liberalism and Neoliberal Institutionalism

4. Constructivism

5. Integration and Reflection on Mainstream IR Theories

MIDTERM

6. Foreign Policy Decision-Making

7. International Security and War

8. Coercion and Bargaining

9. Civil War and Domestic Violence

10. International Law and International Intervention

11. International Political Economy

12. Globalization and Regionalism

GROUP PROJECT PRESENTATION

13. International Cooperation and Global Governance

14. Great Power Relations

15. The Future of International Relations

FINAL

Syllabus for mega-urban projects and comparison (2022)

Course instructor:

Tingting Lu (tingting.lu@sjtu.edu.cn)

Theme I: mega-urban project

Week 1

- Introduction of the course
- Financial centre as a mega-urban project (I)

Week 2

- Financial centre as a mega-urban project (II)

Week 3

- Guest lecture on mega-urban project
- In-situ marginalisation: social impacts of Chinese mega-urban project

Week 4

- **Critical debate** on mega-urban projects
- Comparisons of New York, Amsterdam, Rotterdam and Glasgow

Reading list:

- 1) Fainstein, S.S., 2008. Mega-projects in New York, London and Amsterdam. *International Journal of Urban and Regional Research*, 32(4), pp.768-785.***
- 2) Doucet, B., 2013. Variations of the Entrepreneurial City: Goals, roles and visions in Rotterdam's K op van Zuid and the Glasgow Harbour Megaprojects. *International Journal of Urban and Regional Research*, 37(6), pp.2035-2051.***
- 3) Orueta, F.D. and Fainstein, S.S., 2008. The new mega-projects: Genesis and impacts. *International journal of urban and regional research*, 32(4), pp.759-767.***
- 4) Haila, A., 2008. From Annankatu to Antinkatu: Contracts, development rights and partnerships in Kamppi, Helsinki. *International Journal of Urban and Regional Research*, 32(4), pp.804-814.
- 5) Lehrer, U. and Laidley, J., 2008. Old mega-projects newly packaged? Waterfront redevelopment in Toronto. *International Journal of Urban and Regional Research*, 32(4), pp.786-803.
- 6) Wang, Z. and Wu, F., 2019. In-Situ Marginalisation: Social Impact of Chinese Mega-Projects. *Antipode*, 51(5), pp.1640-1663.

Theme II: Suburbanisation

Week 5

- Theoretical perspectives on suburbanisation and new towns
- Comparison of new towns in UK and US

Week 6

- China's new town projects

- Comparison of residential new town eco new town

Week 7

- Low-carbon new town and technoburbs
- A multi-level perspective

Week 8

- **Critical debate** on suburban projects and politics

Reading list:

- 1) Phelps, N.A., Wood, A.M. and Valler, D.C., 2010. A postsuburban world? An outline of a research agenda. *Environment and Planning A*, 42(2), pp.366-383.***
- 2) Peck, J., 2011. Neoliberal suburbanism: Frontier space. *Urban Geography*, 32(6), pp.884-919.***
- 3) Miao, J.T. and Phelps, N.A., 2021. Urban sprawl as policy sprawl: Distinguishing Chinese capitalism's suburban spatial fix. *Annals of the American Association of Geographers*, 10.1080/24694452.2021.1959294***
- 4) Molotch, H., 1976. The city as a growth machine: toward a political economy of place. *American Journal of Sociology*, 82(2), pp.309-332.
- 5) Logan, J. and Molotch, H., 1987. *Urban Fortunes: The Political Economy of Place*. Berkeley: University of California Press.
- 6) Zhu, J., 1999. Local growth coalition: the context and implications of China's gradualist urban land reforms. *International journal of urban and regional research*, 23(3), pp.534-548.
- 7) Wu, Q. and Waley, P., 2018. Configuring growth coalitions among the projects of urban aggrandizement in Kunming, Southwest China. *Urban Geography*, 39(2), pp.282-298.
- 8) Wu, F., Zhang, F. and Liu, Y., 2022. Beyond growth machine politics: Understanding state politics and national political mandates in China's urban redevelopment. *Antipode*, 54(2), pp.608-628.

Theme III: Urban Regeneration

Week 9

- Theoretical perspectives on urban regeneration
- Comparison of gentrification in UK and US

Week 10

- Urban village redevelopment in China

Week 11

- Property-led urban redevelopment in China

Week 12

- **Critical debate** on urban regeneration

Reading list:

- 1) Lees, L., 2008. Gentrification and social mixing: towards an inclusive urban renaissance?. *Urban studies*, 45(12), pp.2449-2470.
- 2) Smith, D., 2008. The Politics of Studentification and (Un) balanced 'Urban Populations: Lessons for Gentrification and Sustainable Communities?'. *Urban Studies*, 45(12), pp.2541-2564.***
- 3) Shin, H.B. and Kim, S.H., 2016. The developmental state, speculative urbanisation and the politics of displacement in gentrifying Seoul. *Urban Studies*, 53(3), pp.540-559.***
- 4) Smith, D.P. and Holt, L., 2007. Studentification and 'apprentice' gentrifiers within Britain's provincial towns and cities: Extending the meaning of gentrification. *Environment and Planning A*, 39(1), pp.142-161.
- 5) Slater, T., 2006. The eviction of critical perspectives from gentrification research. *International journal of urban and regional research*, 30(4), pp.737-757.
- 6) Ley, D., 2003. Artists, aestheticisation and the field of gentrification. *Urban studies*, 40(12), pp.2527-2544.
- 7) López-Morales, E., Ruiz-Tagle, J., Santos Junior, O.A., Blanco, J. and Salinas Arreortua, L., 2021. State-led gentrification in three Latin American cities. *Journal of Urban Affairs*, pp.1-21.
- 8) Carpenter, J. and Lees, L., 1995. Gentrification in New York, London and Paris: an international comparison. *International Journal of Urban and regional research*, 19(2), pp.286-303.

Theme IV: Land and housing development in China

Week 13

- Urban planning and land development in China
- The rising socio-spatial differentiation in China

Week 14

- Guest lecture on urban governance in China

Week 15

- Housing projects in China

Week 16

- **Individual presentation** on mega-urban projects and comparison

Reading list:

- 1) Yeh, A.G.O. and Wu, F., 1999. The transformation of the urban planning system in China from a centrally-planned to transitional economy. *Progress in planning*, 51(3), pp.167-252.***
- 2) Wu, F., 2018. Planning centrality, market instruments: Governing Chinese urban transformation under state entrepreneurialism. *Urban studies*, 55(7), pp.1383-1399.***

- 3) Li, Z. and Wu, F., 2008. Tenure-based residential segregation in post-reform Chinese cities: a case study of Shanghai. *Transactions of the Institute of British Geographers*, 33(3), pp.404-419.
- 4) Pow, C.P., 2007. Securing the 'civilised' enclaves: Gated communities and the moral geographies of exclusion in (post-) socialist shanghai. *Urban studies*, 44(8), pp.1539-1558.
- 5) Ping Wang, Y. and Murie, A., 1996. The process of commercialisation of urban housing in China. *Urban Studies*, 33(6), pp.971-989.
- 6) Wang, Y. and Clarke, N., 2021. Four modes of neighbourhood governance: The view from Nanjing, China. *International Journal of Urban and Regional Research*, 45(3), pp.535-554.
- 7) Shieh, L. and Friedmann, J., 2008. Restructuring urban governance: Community construction in contemporary China. *City*, 12(2), pp.183-195.
- 8) Tomba, L., 2008. Making neighbourhoods. The government of social change in China's cities. *China Perspectives*, 2008(2008/4), pp.48-61.

Course assessment:

- 1) critical debate 30%
- 2) individual presentation 30%
- 3) final essay 30%
- 4) attendance 10%