

**IMPORTANT NOTES:**

1. The following is a list of fully English-taught courses for the Fall and Winter semesters of the 2025-2026 academic year, for reference only. The courses available for the Fall and Winter semesters of the 2026-2027 academic year will be subject to the final course offerings in the course selection system after students complete their registration on campus.

2. The ZJU Haining International Campus, located in Haining (conveniently situated between Shanghai and Hangzhou), has adopted a model of creating Joint Institutes with partner universities, and Joint Institutes have already been successfully established with the University of Edinburgh and the University of Illinois at Urbana-Champaign (ZJU-UoE and ZJU-UIUC Institutes). Besides, Zhejiang University International Business School (ZIBS) was founded. Courses offered by ZJU-UIUC Institute and ZIBS are also open to undergraduate exchange students (ZJU-UoE is NOT open to exchange students). Haining Campus utilizes a separate course selection system from those of Zijingang and Yuquan Campuses. Students are not allowed to cross-register for courses between Haining Campus and Campuses located in Hangzhou.

Course Code	Quarter	Course Name(CN)	Course Name (EN/FR)	School/College	Course Type	ZJU Campus	Credit	Course Description
0111125	Fall&Winter	高级区域经济学前沿	Frontiers of Advanced Regional Economics	School of Economics	Doctor	Zijingang Campus	3.0	Along with the development of globalization and regional integration, new problems emerged in regional economic development, and as the result, regional economy is facing key problem and theoretical frontiers. Regional division theory, comparative advantage theory, and etc. are theoretical system of modern regional economics. The resources endowment theory, scale economy theory, transaction cost theory, are theoretical cornerstone of modern regional economics.

0121031	Fall&Winter	宏观经济学	Macroeconomics	School of Economics	Master	Zijingang Campus	3.0	The course explores theoretical and empirical issues of central importance for macroeconomics. The major topics covered in the course include economic growth, consumption and savings, investment, business cycle fluctuations, unemployment, the relationship between monetary policy and output, and optimal monetary policy. The course emphasizes the implications of macroeconomic theory for macroeconomic data. Readings include selected chapters from the textbook, class notes, and research articles.
0121032	Fall&Winter	微观经济学	Microeconomics	School of Economics	Master	Zijingang Campus	3.0	This course teaches the fundamentals of microeconomics. This course can be divided into three parts. First, we will discuss supply and demand and other basic forces that determine an equilibrium in a market economy. Second, you will learn a framework for analyzing firms' decisions about optimal production. Third, you will learn about different market structures and the impact of those market structures on firms' behavior. Ideological and political integration point of this course is to cultivate students' sense of social responsibility as a member of society.
0121036	Fall&Winter	计量经济学	Econometrics	School of Economics	Master	Zijingang Campus	3.0	The objective of this course is to provide the basic knowledge of econometrics that is essential equipment for any serious economist or social scientist, to a level where the participant would be competent to continue with the study of the subject in a post-graduate program. The course provides an introduction to basic econometric concepts and data analysis techniques, such as descriptive statistics, correlation and regression, probability, chance variability, and sampling. And the main part of the course covers hypothesis testing, the basic regression theory and techniques used in empirical work which include simple and multiple regression models, dummy variables, heteroskedasticity, and methods of instrumental variables.

0509001	Fall&Winter	基础日语二外	Basic Japanese	School of International Studies	Master&Doctor	Yuquan campus	2.0	<p>Basic Japanese is an elective course for all graduate students in ZJU. It is categorized as a second language course in the teaching program, so it is quite different from other foreign language courses in terms of its content and teaching style. In teaching, the key lies in the training of basics, including kana, vocabulary, and basic sentences. This course is expected to lay a solid foundation for learners to advance their studies.</p> <p>The textbook for this course is Standard English (Old version), jointly compiled by Mitsumura Tosho Publishing Co.,Ltd. and People's Education Press, P.R.C. This textbook has a fine selection of vocabulary, coherent passages, and a proper structure, so it fits second language learners well. In comparison, the New version fits first language learners well because its vocabulary is too large.</p> <p>The teaching period is half a year (16 weeks). The main focus in the first four weeks is the pronunciation of kanas and some basic knowledge of Japanese. After that, in principle, the course will proceed in a speed of one lesson per week. The main objective then is memorizing vocabulary and reading texts aloud. Learners are suggested to watch Japanese animes and films to form a stronger sense of language.</p>
0513022	Fall&Winter	法国文学理论专题	Théories Littéraires Françaises	School of International Studies	Doctor	Zijingang Campus	2.0	<p>Ce cours vise à présenter les théories littéraires françaises au 20e siècle, en particulier les théories récentes depuis quelques décennies, leurs impacts et des débats suscités dans le monde. Par exemple, le structuralisme et le destructuralisme français, le nouveau marxisme, théories de l'espace... A part l'accent mis sur des théories nouvelles, ce cours met en avant une approche pluridisciplinaire, en s'inspirant d'autres théories des sciences humaines comme la linguistique, l'image, la géographie, la psychologie, etc. Ce cours associe l'étude des théories littéraires à la l'histoire littéraire française contemporaine, avec des lectures de textes choisis.</p>
0521032	Fall&Winter	法语文体学	French Stylistic	School of International Studies	Master	Zijingang Campus	2.0	<p>The purpose of this course is to apply the knowledge of stylistics and poetics, to conduct research on several literary categories, to provide tools for analysis, and to closely integrate literary theory and critical practice, teaching students to use stylistic and poetic tools to analyze works. Through literature appreciation, we can educate students on aesthetics, and cultivate students' sense of beauty and a correct understanding of beauty. Students can understand history and society through literature; the course can improve students' critical thinking, innovation and cross-cultural ability, and cultivate students' sense of responsibility and mission to explore the unknown and pursue the truth.</p>

0521049	Fall&Winter	法国哲学	French Philosophy	School of International Studies	Master	Zijingang Campus	2.0	En comparaison avec leurs voisins allemands, les philosophes français étaient souvent moins cérébraux et plus engagés dans la réalité. Un grand nombre parmi eux étaient également des romanciers, artistes ou militants politiques. La philosophie française ressemble plus à un espace inter-disciplinaires sans frontières strictes qu'à une discipline académique déterminée. Il s'agit dans ce cours d'appréhender ce riche héritage dans sa diversité et son désordre original.
0523043	Fall&Winter	俄罗斯文化史	History of Russian Culture	School of International Studies	Master	Zijingang Campus	2.0	<p>This course analyzes and studies the formation and evolution of Russian culture in various periods, involving politics, history, religion, society, military, education, literature, art and other fields. In the teaching process, while combing the connotation and development of Russian culture more completely, it will reveal the impact and role of important events in each period on the process of Russian culture and even the entire world civilization process, so that students can understand the main characteristics of Russian culture and its causes, which lays a good foundation for in-depth study of Russian culture.</p> <p>The main contents of this course are: 1) Cultural characteristics of the Kievan Rus period; 2) Russian history and cultural characteristics before the 17th century; 3) Russian culture in the 17th and 18th centuries; 4) Russian culture in the 19th century; 5) Soviet period culture and its place in the entire Russian cultural history; 6) Russian cultural phenomenon after the disintegration of the Soviet Union.</p> <p>The course teaching is based on a combination of teacher explanations, students' keynote speeches and classroom discussions. Students must read relevant literature outside of class and express independent opinions on important cultural phenomena.</p>
0523118	Fall&Winter	西方思想史	History of Western Thought	School of International Studies	Master	Zijingang Campus	2.0	Il s'agit dans ce cours de donner un aperçu de l'approche de chacun des philosophes occidentaux principaux, un par un. L'histoire de la philosophie se déroule plus dans le temps labyrinthique du Jardin aux sentiers qui bifurquent (Borges) que dans le temps linéaire. Chaque moment dans cette histoire est un point de repère arbitraire dans un espace de possibilités infinies. Étudier une philosophie ne consiste pas à s'approprier un contenu informatif déterminé, mais à apprendre à penser et à voir les choses d'une certaine manière, selon une certaine perspective.

0523140	Fall&Winter	国际组织与全球治理	International Organization and Global Governance	School of International Studies	Master	Zijingang Campus	2.0	<p>This course is a degree program for students of Zhejiang University. It aims to emphasize the key concepts of International Organization and Global Governance, the mechanism of the Global Governance and the subjects of the Global Governance. Theoretical progresses related to the International Organizations in relation to the Global Governance and the approaches of their changes under the background of globalization will be dealt with. It aims to promote the capacity of policy and activity analysis by using methods of discussion and case study. Specialists and external experts will be invited to give specialized lectures on different topics of Chinese participation in global affairs.</p>
0543106	Fall&Winter	计算机辅助翻译	Computer-Assisted Translation	School of International Studies	Master	Zijingang Campus	2.0	<p>As a practical course, this course mainly focuses on how to use modern translation techniques to complete translation projects quickly, efficiently and accurately. The course instructs students how to use advanced search capabilities to obtain relevant information and resources, how to convert the relevant bilingual resources into translation memories and termbases, and how to use Google, Bing, Systran neural network translation and other machine translation technology for pre-translation, and then use such mainstream translation software as Trados, MemoQ, or such cloud translation platforms as Smartcat to create new translation projects, complete translation, review and assess quality. Through carefully designed experiments, simulated and real translation projects, students can experience all stages of modern translation practice in a different role each time and thus get them ready for modern translation services.</p>
1811114	Fall&Winter	大数据健康科学	Big Data Health Science	School of Medicine	Doctor	Zijingang Campus	2.0	<p>Health and medical big data is an important basic strategic resource of the country. It is vital to the development of public health and is closely related to national health. Its application and development are conducive to saving medical costs and improving the level of medical services. It will benefit my country's economy, society, people, and impact all aspects of life. The establishment of this course closely follows the development trend of world data science and artificial intelligence, closely follows the national Healthy China development strategy, focuses on and promotes the integration and development of basic theories in the field of artificial intelligence and traditional epidemiological theories, and serves the development of society. It is an indispensable course for the "Healthy China 2030" strategy. The topics of this course include: Introduction to Big Data Health Science and Big Data-based Research Design, Population Genetics, Data Mining and Bioinformatics, Pharmacogenetics, Statistical Analysis Methods, Population Nutrition, Mental and Behavioral Health, Environment And health, Precision health, as well as Biobanks and Biomarkers, Ethics and Data Security.</p> <p>This course is taught in English. The lecturer, Professor Wu Xifeng, has rich teaching experience, and the other teachers have graduated from top universities in the world with solid professional knowledge.</p>

1811115	Fall&Winter	大数据健康科学应用与实践	Application and practice of big data health science	School of Medicine	Doctor	Zijingang Campus	2.0	Through practical operation and case analysis, this course deepens students' understanding of the application of big data technology methodology in the field of medical and health care, cultivates students' practical hands-on ability, cultivates students' in-depth research on the combination of big data technology and medical health, and promotes students' ability to learn independently and practice innovation. The main topics of this course include: 1) 1) Introduction to Application and Practice of Big Data Health Science; 2) 2) Research and Design Practice Courses Based on Big Data; 3) Biobank and Biomarker Practice Courses; 4) A Practical Course on Statistical Analysis Methods Based on Big Data; 5) Big Data Science Related Software Application Practical Courses; 6) Data Mining and Bioinformatics Practical Courses Based on Big Data; 7) Practical Courses of Population Genetics Based on Big Data; 8) Pharmacogenetics Practical Courses Based on Big Data; 9) Practical Course on Infectious Disease Analysis Based on Big Data; 10) Population Nutrition Based on Big Data; 11) Psychological and Behavioral Health Practical Courses Based on Big Data; 12) Environment and Health Practical Courses Based on Big Data; 13) Practical Course on Aging and Aging Indicators; 14) Ethics and Data Security Practice Course of Health and Medical Big Data; 15) Precision Health Based on Big Data: Disease Risk Prediction and Health Management Practice Courses; 16) Field Trip.
2021029	Fall&Winter	管理统计学（英）	Managerial Statistics	School of Management	Master&Doctor	Zijingang Campus	3.0	The subject is designed to equip Ph.D. students with advanced statistical methods in business decision-making and policy analysis. Compared to undergraduate statistics course, this course adopts more mathematical approaches such as calculus, linear algebra, etc. The interactive teaching and case study methods will be used in the delivery of the subject. The methods covered in this subject include: descriptive statistical analysis and presentation, probability theory and probabilistic distributions, sampling and distributions, parameter statistics and hypothesis testing, correlation and regression analysis, analysis of variance and covariance, multivariate data analysis such as exploratory factor analysis, logistic regression, cluster analysis, discriminant analysis, as well as application of statistical software such as SPSS. Upon completion of the subjects, the students should be able to effectively use the statistical methods learnt in the subjects in analyzing and solving the complex business problems they may face in their working environment.
2021050	Fall&Winter	数据挖掘	Data Mining	School of Management	Master	Zijingang Campus	3.0	With the rapid developments in computer and data storage technologies, the fundamental paradigms of classical data analysis are mature for change. Data mining techniques aim at helping people to work smarter by revealing underlying structure and relationships in large amounts of data. This course takes a practical and research oriented approach to introduce the new generation of statistical data mining techniques and show how to use them to make better decisions. Topics include data mining project models, leading data mining software, important data mining models and their applications in academic research in different disciplines.

2021052	Fall&Winter	设计思维	Design Thinking	School of Management	Master	Zijingang Campus	2.0	<p>Welcome to this Design Thinking course! The creation of a new product or service is not a simple process. It takes in various organizational levels, numerous functional areas, dispersed geographies and requires unique skills and competences of individuals involved in it. This course blends the perspectives of marketing, design and operations and aspires to provide the students with a systematic process that will enable them to understand how design ideas and practices may evolve into innovative solutions to marketplace needs, wants and desires.</p> <p>However, the danger of formulating systematic processes in connection with product or service development work is that we are led into thinking that a systematic approach necessarily gives the right answer. This is just not so. The most effective solution is achieved by the right balance of systematics and soft issues including human interaction and intuition. Therefore, in addition to focusing on the design and development phases a product goes through, the course also addresses a more general view of the appropriate attitude to design and innovation in today's fast changing global business environment.</p>
2023102	Fall&Winter	技术与创新战略(英)	Technology and Innovation Strategy	School of Management	Master	Zijingang Campus	2.0	<p>This course will have seven modules: (1) Basic Frameworks and Toolkits; (2) Systems and Platforms; (3) Commercialization; (4) Experiments in Commercialization; (5) Product development; (6) Global Value Chains; (7) Commercializing Web2.0.</p> <p>This course (1)provides a meaningful introduction to organization and to current philosophies on how to manage organizations by technology and innovation strategy; (2)provides a clear understanding of the role of technology and innovation strategy in managing organizations, both now and in the future; (3)facilitates the learning of concepts, frameworks, and approaches of technology and innovation strategy; (4)presents material that is interesting, informative, and useful for students.</p> <p>Innovation is the primary driving force for development. To pursue innovation-driven development, we must put innovation at the core of China's overall development. The world today is undergoing profound changes unseen in a century. The international situation is complex and volatile. The tasks we face are as onerous and the risks and challenges we face as never before. How to deal with it? Innovation is the key to our success. This course aims to cultivate innovative industrial management talents with solid professional knowledge, strong innovation consciousness, excellent innovation quality and scientific innovation skills, and to cultivate innovative and leading talents with international vision, innovation ability, entrepreneurial spirit and social responsibility. This course is oriented to the strategic needs of constructing innovative countries, and aimed at training the students' innovation ability, management</p>
2023104	Fall&Winter	QTEM海外模块	QTEM Module	School of Management	Master	Zijingang Campus	4.0	<p>An important feature of the Master in Management Science and Engineering Program is that the program is a part the QTEM (Quantitative Techniques for Economics and Management) Master Network (<a href="http://www.qtem.org">www.qtem.org</a>). Zhejiang University is the first university in China to join the QTEM Master Network. The QTEM Master Network is characterized by skills in analytical and quantitative techniques to support decision-making in an international context. It is composed of top business schools from a dozen countries (see below). Students can choose to exchange to any QTEM partner university in any country for one semester. After completing the course credits and other criteria required by the QTEM Master Network, students will receive a QTEM Master Certificate.</p> <p>This QTEM module course is specially developed based on the QTEM feature of the Master Program. Students who participate in QTEM exchange can use 4 credits from QTEM partner universities as Zhejiang University's elective credits. The courses from the QTEM partner universities should meet the following requirements:</p> <ol style="list-style-type: none"> <li>1.The courses should belong to QTEM course modules of "Business Intelligence and Big Data", "Marketing and Supply Chain", or "Innovation and Strategy".</li> <li>2.The courses must be quantitative (highly quantitative/semi quantitative).</li> <li>3. The courses must be approved by the student's advisor and the Master Program Committee.</li> </ol> <p>The details of QTEM courses: <a href="http://www.qtem.org/en/students/courses">http://www.qtem.org/en/students/courses</a></p>

2041508	Fall&Winter	营销管理	Marketing Management	School of Management	Master	Zijingang Campus	2.0	<p>The course, Marketing, refers to whatever it takes to grow a business by fostering exchange between the firm and its customers, i.e. marketing creates value for the firm's chosen customers and transfer value to the customers and extracts a share of the value for the firm. The skill of marketing is the skill to monitor and understand customers, competitors, and collaborators, and to find the better way to design and deploy the firm's limited resources to serve its customers at a profit. In this way marketing helps to set a firm's strategic direction. Marketing is the process of management and not something like specific handicrafts.</p> <p>Apart from the basic concepts of marketing, the course will tackle and resolve the problems in marketing to enhance the capability of diagnosing, identifying and solving problems in marketing by managing knowledge and skills of marketing. In this way, you will understand complicated situation and make the sense of marketing by using a assemble framework to be competent for marketing and planning of firms.</p> <p>You will be asked to read the reading materials, prepare every case, explain examples and write the papers, and come to each class confident to face discussing and questioning in the class.</p>
2043010	Fall&Winter	全球视野拓展（海外访学）	Expand the Global Vision	School of Management	Master	Zijingang Campus	2.0	<p>Global Vision (Overseas Visiting) is one of the EMBA Global Business Practice elective modules designed to provide students with a distance learning experience with elite schools and to experience the training model and learning atmosphere of top business schools to help improve students International vision, for Chinese and foreign business people to build exchange learning platform.</p>
2122003	Fall&Winter	高级计算机系统结构	Advanced Computer System Architecture	College of Computer Science and Technology	Master	Yuquan campus	2.0	略

2211370	Fall&Winter	高级微观经济学	Advanced Microeconomics	School of Public Affairs	Doctor	Zijingang Campus	3.0	This course is devoted to discuss basic results in the microeconomic theory. It studies how an individual selects an appropriate action or making an appropriate decision. Microeconomic theory is founded on the premise that these individuals behave rationally, making choices that are optimal for themselves and how the markets are organized. It will cover topics in consumer theory, producer theory, choice under uncertainty, game theory, the theory of markets, general equilibrium theory, welfare economics, social choice, public goods, and externalities. The purpose of the course is to introduce some advanced theories and analytical tools and the types of questions that are used and answered in each area.
2211371	Fall&Winter	高级计量经济学	Advanced Econometrics	School of Public Affairs	Doctor	Zijingang Campus	3.0	The course is research-oriented and aims to introduce graduate students the advanced econometric methods and tools that are essential for their study and research. Instructor introduces econometric models in cross-sectional data, time series data, and panel data settings. OLS, GMM, MLE, and other semi or nonparametric methods will be presented. Students are required to apply the learned methods and models to analyze sample data by using the Stata, R, or Matlab softwares.
2311015	Fall&Winter	定量研究方法	Quantitative Methods in Communication Research	College of Media and International Culture	Doctor	Zijingang Campus	2.0	This course is designed to provide doctoral students with a sophisticated understanding of quantitative research methods in the Communication discipline. In this class, students will learn about the various principles and techniques of quantitative research methods, which will prepare them to 1) understand and evaluate existing research and 2) design and implement their own research. By the end of the course, students should be able to independently design and evaluate research.

2822001	Fall&Winter	传递现象	Transport Phenomena	School of Chemical and Biological Engineering	Master&Doctor	Zijingang Campus	4.0	This course deals with the fundamental principles and basic laws concerning the transporting processes of three basic physical quantities, momentum, energy and mass. The students should study, through typical application cases, the methods of employing theory of transport phenomena to solve practical problems.
3221002	Fall&Winter	线性系统理论（英）	Linear System Theory	College of Control Science and Engineering	Master	Yuquan campus	2.0	Linear System Theory is the foundation course of the discipline of control science and engineering. The contents include: introduce the common procedure of solving engineering problems by using Linear System Theory, with the emphasis on the characteristics and analyzing tools of linear models; introduce state space description and solution; introduce stability, controllability and observability; introduce typical feedback design of controllers.
3521016	Fall&Winter	算术几何简介	Introduction to arithmetic geometry	School of Mathematical Sciences	Master	Zijingang Campus	3.0	<p>The goal of this course is to give an introduction to the arithmetic of Shimura varieties. These are certain algebraic varieties over number fields that are attached to algebraic groups such as <math>GS_{p,2g}</math> or unitary groups. They are interesting because their cohomology is related both to automorphic forms and to Galois representations. This leads to deep connections between these two notions (Langlands program).</p> <p>During the first half of the course, our aim will be to define Shimura varieties, study key examples, and express their cohomology in terms of automorphic forms (Matsushima's formula).</p> <p>During the second half, we will learn about the Langlands-Kottwitz method. This technique expresses the Zeta function of a Shimura variety in terms of automorphic L-functions.</p>

3924004	Fall&Winter	格式塔治疗：理论与实践	Gestalt Therapy: Theory and Practice	Department of Psychology and Behavioral Sciences	Master	Zijingang Campus	3.0	<p>Gestalt Therapy belongs to the spectrum of humanistic psychotherapies developed in the last century as a counter-movement to psychoanalysis, but also to behaviorism. Its emphasis lies on the awareness of the actual moment, which makes it an existential, experiential, and experimental endeavor. This course will be held in the same style: it will combine theoretical knowledge with self-experience and practice, and integrate them.</p> <p>It will provide overviews over</p> <ul style="list-style-type: none"> <li>• the socio-historical context of Gestalt therapy focusing on its founders, Frederick and Laura Perls as well as Paul Goodman</li> <li>• phenomenology and existentialism as philosophical starting points for the psychotherapeutic practice of Gestalt therapy</li> <li>• the concept of awareness as a special form of focused attention,</li> <li>• basic principles of Gestalt therapy such as here and now, I-thou (Buber), dichotomies, self-as-process,</li> <li>• contemporary psychotherapy research on outcome and process.</li> </ul> <p>Students will be invited to a variety of in-vivo exercises to combine practical work with the theoretical underpinnings. Therefore, students will have to be minimally personally engaged in the course in order to support their own learning effects. Confidentiality of personal information is based on everyone's commitment to an informed consent statement.</p>
4413031	Fall&Winter	德国哲学原著选读	Selected Readings of German Philosophy	School of Philosophy	Doctor	Zijingang Campus	2.0	<p>This course aims to improve students' original reading skills and deepen their understanding of German philosophy through intensive reading of original German philosophical texts (in Chinese and German). The original works selected for this course cover both classical German philosophy and contemporary German philosophy, including the works of famous philosophers such as Kant, Hegel, Schopenhauer, Marx, Nietzsche, Husserl, Heidegger, Gadamer, Wittgenstein and Adorno. This course distills relevant nurturing elements, encourages students to actively read Marx-related works and pursue a sense of responsibility and mission for truth, and promotes students' development in independent learning, healthy growth, responsibility, and practical innovation.</p>
4621098	Fall&Winter	日耳曼学研究方法	Forschungsmethoden der Germanistik	School of International Studies	Master	Zijingang Campus	2.0	<p>The geneses and reception of human science and cultural studies is closely associated with society, social ideology and development of politics, economy and culture. This course is a cross-shaped course, studying the inter-relationship between German literature and society based on the theories of literature and sociology and attempt to familiarize students with the reality of German society through the production of literary works, the orientation of aesthetic value and the mechanism of literature acceptance. The link between the contemporary German culture and society is the focus of this course.</p>

4621102	Fall&Winter	法语语言学导论	Introduction to General French Linguistics	School of International Studies	Master	Zijingang Campus	2.0	<p>This course takes Saussure's structuralist linguistic theory and French functionalist linguistic theory as the main content, introduces representative current linguistic schools, and focuses on French related linguistic schools and their theories and ideas.</p> <p>Main contents of this course:  1. Commonly used terms in French linguistics; 2. Main branches and important research fields of French linguistics; 3. Historical clues of the development of French linguistics; 4. Basic knowledge of French phonetics, phonology, morphology, and syntax,</p> <p>Encourage students to conduct research-based learning based on the land of China, cultivate students' sense of responsibility and mission to explore the unknown and pursue the truth, and promote students' development in independent learning, healthy growth, responsibility, and practical innovation.</p>
4621103	Fall&Winter	法语词汇学	French Lexicology	School of International Studies	Master	Zijingang Campus	2.0	<p>Guided and supported by the basic theories and methods of Saussure's structural linguistics and Martinet's functional linguistics, this paper extracts and describes the relevant research methods of French lexicology.</p> <p>Specific content of the course includes: distinguishing between lexicology and lexicography. Learn the basics of French lexicology, and master the morphology and semantic analysis of French words. Learn the basic concepts and basic structure of dictionaries in lexicology research.</p> <p>Encourage students to carry forward the scientific spirit, analyze objectively, and get rid of introspective analysis methods.</p>
4623186	Fall&Winter	20世纪法国文学史	The Literary History of France in the 20th Century	School of International Studies	Master	Zijingang Campus	2.0	<p>The Literary History of France in the 20th focuses on the French literature after World War II until the new century, focusing on the literary works and ideas of relevant writers. We will analyse the works from multiple perspectives.</p> <p>Based on the texts reading, combined with important theories such as philosophy, sociology, psychology, and aesthetics, this course tries to cultivate students' interdisciplinary ability. We will refine the educational elements related to this course, and encourage students to study French literature from a unique Chinese perspective, based on China and looking at the world. The students' have to explore and innovate, developing all their abilities.</p>

4623187	Fall&Winter	法语国家与地区区域 国别研究专题	Study on the Francophone Countries and Regions	School of International Studies	Master	Zijingang Campus	2.0	Leading students to conduct research on topical issues in the Francophone region from an interdisciplinary perspective, this course provides a comprehensive and in-depth study of the history, politics, economics, society, and literature of Francophone countries and regions, while emphasizing cross-cultural understanding and cultural relativity to strengthen students' language skills while fostering their awareness and self-awareness of interdisciplinary research.
4623190	Fall&Winter	法国当代文学研究专 题	Studies of Contemporary French Literature	School of International Studies	Master	Zijingang Campus	2.0	Since the late 1970s, contemporary French literature has entered a new period in which literature has taken a more diverse direction. This course aims to introduce the main trends and representative writers of contemporary French literature, and to select important works for reading and analysis. The course will focus on trends and genres such as self-writing, historical writing, playful fiction, contemporary poetry, and contemporary drama. It also explores some important themes of contemporary literature such as irony, eclogism, brain text, artificial intelligence, and dystopia.
0121026	Winter	产业经济理论与政策	Industrial Economics Theory and Policy	School of Economics	Master	Zijingang Campus	2.0	We will mainly study the economic theory of competition policy, and briefly introduce the law of competition policy in the real world, and we will also analyze some case studies of competition law. We also introduce firm's incentive for R&D and intellectual property. Finally, we introduce network effects and network goods. The topics we will cover include: Cartels and tacit collusion; Horizontal mergers; Strategic incumbents and entry; Vertically related markets; Innovation and R&D; Intellectual property; Network effects and network goods.

0500010	Fall/Winter	研究生学术英语能力提升	English academic communication	School of International Studies	Master&Doctor	Zijingang Campus	2.0	<p>Academic communications in English : Writing and presentation is a course focusing on task-based academic writing and oral presentation. The course is designed for developing students' skills of researching in their academic discipline, and skills of academic writing and presentation. Students are required to collaborate and finish series of tasks for a research project and present their work to the class. The course is designed to provide students with the methods to plan, research, organize, write, edit, and evaluate various forms of academic writing. It is also intended for improving their ability of presentation for seminars and conferences in the academic world.</p> <p>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 and writing styles and techniques, evaluation of information resources, a group research paper, and group oral presentations based on the research paper, etc.</p>
0500011	Fall/Winter	研究生英语应用能力提升	English Communication in Professional Situations	School of International Studies	Master&Doctor	Zijingang Campus	2.0	<p>Designed for the graduates of non-English majors, the course aims at effectively enhancing students' cross-cultural communication skills and comprehension, helping them re-understand the expressions of the English language from the differences between Chinese and Western cultures and thinking patterns, and reconstructing their global competency by highlighting the training of core skills in English speaking and academic English presentation from multidisciplinary topics, e.g. healthcare, law, education, economics, science and technology through an integration of classroom instructions, team work and autonomous practice. Meanwhile, the course underscores the importance of the elements of ideology and politics from the topics mentioned above and current events, integrates them into the ideology and politics education, deepens students' understanding of Chinese history and culture, builds cultural consciousness and pride in Chinese history, motivates them for autonomous learning, and finally cultivates the new-type talents with patriotism, responsibility and global competency.</p>
0509006	Winter	AI时代的中国文化体验与数字表达	Experiencing Chinese Culture and Its Digital Expression in the AI Era	School of International Studies	Master&Doctor	Zijingang Campus	1.0	<p>Experiencing Chinese Culture and Its Digital Expression in the AI Era is an interdisciplinary course that integrates artificial intelligence (AI) technology with the teaching of Chinese culture, designed for graduate students from diverse cultural backgrounds. The course aims to enhance students' understanding and expression of both China's outstanding traditional culture and its advanced socialist culture, leveraging AI to provide immersive cultural experiences and promote effective cross-cultural communication. Delivered in English, the course emphasizes the deep integration of cultural knowledge, language communication, and technological application. Through creativity-driven learning, students are encouraged to become active cultural ambassadors with both a global perspective and a strong foundation in Chinese cultural literacy. By constructing a dual pathway of "cultural learning + AI application, the course explores new paradigms for the international dissemination of Chinese culture.</p>

0509007	Winter	英美文学电影欣赏	English and American Literature Films	School of International Studies	Master&Doctor	Zijingang Campus	1.0	This course is designed to help non-English major students to grasp the process of English and American literature, and also English and American history and social culture. This course consists of pre-watching of literature films, in-class discussion and section watching etc. in the multicultural context. Combined with lectures, discussion and online resources, this course tends to improve students' understanding of English and American literature and global qualities.
0523111	Winter	英汉结构比较	Comparative Studies on English and Chinese	School of International Studies	Master	Zijingang Campus	2.0	English and Chinese are among the most influential languages in the contemporary world. They are also relatively well studied thanks to abundant documentations and generations of research efforts. Comparative studies of the two languages are an effective means of gaining insight into the properties of human languages in general and those of the two languages in particular. This course is therefore of special value to Chinese students who wish to better appreciate the similarities and differences between English and Chinese and to describe and explain them in an up-to-date theoretical framework.  The course covers the following eight topics: introduction, the lexicon & argument structure, VP structure, clausal structure I/II/III, NP structure, and conclusion.
0623421	Winter	量子光学	Quantum Optics	School of Physics	Master&Doctor	Zijingang Campus	2.0	The course is designed for the graduate students to understand the basic theories, concepts and methods of quantum optics, deeply understand the quantum properties of light, know the interaction system of light and atoms, and be able to analyze some special two-level, multi-levels atomic systems, and distinguish the differences among the fully quantum, classical and semi-classical theory.

0713008	Winter	专业外语（生物学）	Speciality English (Biology)	College of Life Sciences	Doctor	Zijingang Campus	1.0	This course leads the students to read, write and communicate English in the context of scientific research, with a focus on the discipline of Biology. The course will particularly focus upon the important skills of academic paper writing and upon the style and content of Oral (scientific conference style) presentations with power-point. In this way it is designed to be highly practical and useful for any postgraduate who is required to be involved in the process of the writing of academic papers and in the giving of scientific presentations in English.
0823049	Winter	有限元原理与工程应用	Finite Element Methods and its Engineering Application	School of Mechanical Engineering	Master	Zijingang Campus	2.0	This course will introduce FEM and its typical applications in mechanical engineering, including FEM theory, FEM of statics, FEM of dynamics, FEM of nonlinear analysis, FEM of thermal analysis, CFD, and FEM in electromagnetics. Some examples of FEM application will be performed and students need do several engineering projects with FEM. In addition, in order to improve the English ability of students, several seminars will be discussed in English.
0823069	Winter	低污染燃烧理论与技术	Theory and Technical of Low Pollution Combustion	College of Energy Engineering	Master	Yuquan campus	2.0	With the improvement of people's living standards, people have higher and higher requirements for the quality of the environment. At the same time, environmental pollution has gradually attracted people's attention. Postgraduates majoring in engineering thermophysics, thermal energy engineering, energy and environmental systems engineering have already had a relatively basic understanding of combustion and pollution issues at the undergraduate stage. However, in the face of further scientific research and practical engineering applications, it is necessary for them to comprehensively and deeply understand the generation and control principles of pollutants in the combustion process, as well as the combustion theory and technology of low pollution emissions. In addition, they should also master the current situation of combustion pollution at home and abroad, and understand the domestic and foreign research and development trends in this field. The basic contents of this course are as follows, the current situation and main sources of air pollution, the diffusion of combustion pollutants in the atmosphere, the generation principle of various pollutants during fuel combustion. The low NOx combustion technology of coal-fired boilers, the efficient removal technology of SO2 and NOx, efficient PM control technology and multi pollutant collaborative control technology in combustion flue gas. And the low pollution incineration technology of domestic waste, emission control of dioxin pollutants during garbage incineration, etc. Through the study of this course, students are required to understand the current situation of air pollution and the main prevention and control measures and methods, master the basic theory of pollutant generation, emission and control during the combustion of coal, oil, domestic waste and other fuels, master the combustion theory and technology of low NOx emissions, and master the principles and methods of flue gas combustion desulfurization, flue gas desulfurization, flue gas denitrification, flue gas dedusting, and coordinated control of multiple pollutants, master the fluidized bed low pollution combustion technology and its practical application. More importantly, through the English teaching and learning of this course, students are encouraged to fully know and understand the national major strategic needs of "carbon peaking and carbon neutralization", cultivate graduate students' research interest in low pollution combustion theory and technology. This will help them to explore and innovate the theory and technology of low pollution combustion suitable for China's development, so that they can master and track the research trends at home and abroad, and improve the postgraduate's English expression and communication skills and teamwork spirit.

0922006	Winter	材料结构与性能	Structure and Properties of Materials	School of Materials Science and Engineering	Master&Doctor	Zijingang Campus	2.0	Understanding the relationship among materials structures, properties, performance, and process, including carbon materials, MOFs materials, polymers and the basic for materials science. Introduce the achievement coming from the respected professors of China, especially from Zhejiang University.
0924002	Winter	材料电子显微学	Electron Microscopy for Materials Science	School of Materials Science and Engineering	Master&Doctor	Yuquan campus	2.0	This course is mainly prepared for the students from the school of materials science and engineering. It will cover the following topics: electron optics, coherent imaging, high-resolution transmission electron microscopy, electron diffraction, scanning electron microscopy, and the analytical electron microscopy. The main purpose is to teach the fundamentals knowledge of TEM for the material science oriented research.
1023078	Winter	功率半导体器件及其应用设计	Power Semiconductor Devices and Application	College of Electrical Engineering	Master	Yuquan campus	1.0	The course introduce the power devices Concepts, basic circuit topologies and reflections on device application, device Integration perspectives and so on. Power semiconductor device materials, diodes, power transistors, MOSFET and IGBT electrical properties and physical properties are introduced. How can we access the data sheet, to know the characteristics of power semiconductor device which should be known for applications. Introduce the requirements of MOSFET and IGBT device driver. How to design the MOSFET and IGBT drive and protective circuits. Analyze heat sources and heat transfer characteristics of power devices. According to the influence of temperature on power semiconductor devices, the thermal design technologies are introduced for power semiconductor devices.

1113255	Winter	现代集成电路工艺技术	Modern VLSI Process Technology	College of Information Science and Electronic Engineering	Master&Doctor	Yuquan campus	2.0	Basic process flow of bipolar and MOS; Preparation and cleaning technology of semiconductor substrate materials; Thin film technology; Doping technology; Patterning Technology; Metallization; IC Process integration; Packaging; MEMS; special devices; nano manufacturing technology, etc. By introducing the development process of microelectronics technology, stimulate students' feelings of serving the country with science and technology and their mission; By introducing the FinFET process proposed by Professor Chenming Hu, to cultivate students' sense of responsibility to explore the unknown and climb the peak of science.
1201002	Winter	应用固体力学	Applied Mechanics of Solids	College of Civil Engineering and Architecture	Master&Doctor	Zijingang Campus	2.0	The course introduces the physical laws, mathematical methods, and computer algorithms that are used to analyze and predict the behaviors of materials and structures in response to mechanical or thermal loading. The topics include: 1) the mathematical descriptions of stress and strain in solids; 2) constitutive laws; 3) analytical techniques and solutions for elastic, plastic, and viscoelastic solids; 4) the theory and modeling of material damage and failure; and 5) the fundamentals and application of finite element method. The course is intended for graduate students to understand basic principles of solid mechanics, and their applications and implementations to improve the analysis and design of civil engineering materials and structures.
1213360	Winter	智能结构技术	Smart Structure Technologies	College of Civil Engineering and Architecture	Doctor	Zijingang Campus	2.0	This course will cover the basics of smart structure technologies, including smart materials, sensors, structural health monitoring, diagnosis, and control. Emphasis is given to vibration-based global monitoring with the basics of random vibration theory and experimental modal analysis; guided waves-based local monitoring with pitch-catch method and impedance method; soft computing techniques for damage diagnosis and FE model updating; and structural control.

1221299	Winter	建筑遗产保护	Architecture Heritage Conservation	College of Civil Engineering and Architecture	Master	Zijingang Campus	2.0	<p>Teaching will be conducted in English and will focus on theories and concepts of restoration and conservation of historical heritage. The course will follow the western perspective of historical heritage restoration, including the philosophy and definition of the preservation and intervention of ancient and traditional buildings as well as urban context.</p> <p>Understanding and respecting the existing historical heritage is the basis for correct intervention in cultural relics. A fundamental perspective of the course is a study aimed at gaining a better understanding of key definitions, main concepts and methods to understand the underlying ideas of its historical heritage. Because traditional heritage is extremely diverse and presents various examples from the past, the course intends to present an approach that is extremely general and applicable to many different physical objects of the past. In short, our idea is to see architecture as "a process" rather than an idealistic genre, or "fixed prerequisites" that never actually existed.</p> <p>This course aims to develop some basic concepts about the concept of "philological restoration", which can be defined as the accurate understanding and preservation of the originality of materials and the historical uniqueness of buildings. This philosophical view does not imply the existence of the building in its original state, but simply wants to see the building in its original material state as a work in progress, in which all the different historical moments and all the construction processes have their dignity, to preserve its physical state in order to respect the culture and identity of those who built it, especially its local identity.</p> <p>Another central idea we discussed was "conservation", a very general approach intended as a consistent, coordinated</p>
1222002	Winter	现代建筑评论	Architecture Review	College of Civil Engineering and Architecture	Master	Zijingang Campus	2.0	<p>The teaching will be conducted in English following the western perspective in terms of critical approach on history and in specific in critical review of arts and architecture.</p> <p>Architectural Criticism is related to critical interpretation of architectural history, dynamic, buildings, cities and individual artist's work. This includes also the interpretation of the historical events, investigation of the originality of materials, and critical interpretation related to verify or invalidate the texts and documents. It uses a historical discourse which aims to critically interpret the sources according to cultural and philological documentation.</p> <p>Architectural critics create a discussion on the cultural context of the object under exam, and look at the cause and effect of history. Critics are based on interpretation of the past events, and make use of a philosophical and a more philological approach in historical study. The fundamental point is to interpret the cultural difference of another age and lead the evaluation of historical material, to distinguish the principles according to which it might be possible to attempt the evaluation. An additional need is the necessity to propose to the contemporary people the reason and the understanding of the rational principles which generate the traditional artifact, in order to assess a culture of the past.</p> <p>Critics intend to discuss the cultural context of the historical events. The object of analysis has to be temporally located and interpreted in the local cultural context in terms of geography or time. All of this has to be related to the philosophy of history.</p> <p>An important part of the course is tied to understanding the laws and trends of architectural development according to the cultural development in different time periods. The investigation will be based on scientific methods of analysis and interpretation of architecture's history.</p> <p>The teaching methods first carry out theoretical explanations and explanations, and then conduct in-depth and meticulous analysis and discussion in the form of multimedia presentations, basically using narration, explanation-based, combined with students' questions for discussion.</p> <p>The course will follow the western school of critics and historiography. Key scholars represent a milestone in the critic and philosophy of architecture historiography.</p> <p>Some iconic names: Bruno Zevi, Leonardo Benevolo, Manfredo Tafuri, Renato De Fusco, Lorenzo Spagnoli, Aldo Rossi, Kenneth Frampton, Rudolf Panowsky, James S. Ackerman, John Harvey, Liang Sicheng, Charles Jencks, Nikolaus Pevsner, Giulio Carlo Argan, Fulvio Pratesi, Auguste Choisy, Sigfried Giedion, Rudolf Wittkower.</p>
1223428	Winter	高等水文建模	Advanced Hydrological Modelling	College of Civil Engineering and Architecture	Master	Zijingang Campus	2.0	<p>This subject will focus on hydrological modelling including model establishment, parameter optimisation, prediction verification, sensitivity and uncertainty analysis etc. Students will learn and use Python coding throughout the subject. Students will develop hydrological modelling skills for flood forecasting in urban areas and catchments and water resources management.</p>

1413034	Winter	生物信息学	Bioinformatics	College of Environmental and Resource Sciences	Doctor	Zijingang Campus	2.0	<p>Bioinformatics is an interdisciplinary between life science and computer science. The emergency and development are promoted by the wide application of the next-generation high-throughput sequencing technology in life science. The high-throughput sequencing technology has become a routine approach for environmental microbiology investigation. The sequencing big data hide many new discoveries, but advanced methods are required for accurately and rapidly processing. This course will introduce the development of high-throughput sequencing, amplicon reads processing, microbial community numerical ecology analysis, and metagenomic reads processing. Moreover, the bioinformatic data visualization with R and how to solve the actual questions in environmental microbiology will also be introduced.</p>
1423089	Winter	陆面过程观测与模拟	Observations and Modeling of Land surface process	College of Environmental and Resource Sciences	Master	Zijingang Campus	2.0	<p>The course introduces major land surface processes such as water, carbon and nitrogen cycles and energy exchanges. Focusing on multi-source observations and land surface modeling, the main contents include: (1) Main land surface processes and their responses to global change; (2) Structure, characteristics and operation of the state-of-the-art land surface models; (3) Responses and feedbacks of land surface processes to global change - past and future; (4) Methods and cases for multi-source observations and monitoring of land surface processes; (5) Inversion of key parameters of land surface processes; (6) Mapping technology of key parameters of land surface processes; (7) Topics on soil carbon and nitrogen cycle in terrestrial ecosystems. Combining literature review, class discussion, and examinations the course tends to help students understanding the main land surface processes, the critical role of remote sensing technics and models in understanding land surface processes, and the responses and feedbacks of land surface processes to global change.</p>
1609001	Winter	微生物与植物的多样性	Diversity of Microorganisms and Plants	College of Agriculture and Biotechnology	Master&Doctor	Zijingang Campus	2.0	<p>The course covers major phylum of microorganisms on earth, their interaction with plants/crops. Emphasize is given to differentiate organisms based on their distinct characteristics. The importance of inter specific interactions and its surroundings are also discussed.</p>

1611095	Winter	植物-微生物分子互作 (英文)	Plant-microbe molecular interactions	College of Agriculture and Biotechnology	Doctor	Zijingang Campus	2.0	The course is intended to provide graduate students of diverse backgrounds including historical, recent and current developments in plant-pathogen interactions that will meet their professional needs and prepare them for advanced graduate courses in specialized areas of crop protection. The objective of this course is to highlight pathogen and host physiology, genetics and biochemical mechanisms that impact development of diseases and their control strategies. Topics include major groups of plant pathogens and genetics, molecular and biochemical mechanism of crop resistance will be highlighted using discoveries from model and non-model systems. The course is designed to enhance the students' knowledge and experience on both historical and recent developments and milestones in host responses to pathogen infection. The course will be given in English with lectures, leading discussion and article reading and will provide the latest information and progress on the physiology and molecular biology of pathogens. Meanwhile, this course will teach the spirit of patriotism and innovation through exemplifying the economic importance of crop diseases and the advances made by Chinese scientists.
1611503	Winter	现代农业科学研究方法 与实践	Theory and Practice of Research Methodology for Modern Agric	College of Agriculture and Biotechnology	Doctor	Zijingang Campus	2.0	The theory and methods as well as advance will be mainly introduced on investigation of field and horticulture crops, involving reproductive development and molecular regulation of crops, the technology of plant cells and its application, the technology of plant chromosome and its application. In addition, we will make full use of educating elements related to this course and encourage students to perform research learning based on China's reality, to explore the unknown, the pursuit of truth sense of responsibility and sense of mission.
1613045	Winter	专业外语 (核农所)	Professional English (Nuclear Agriculture)	College of Agriculture and Biotechnology	Doctor	Zijingang Campus	1.0	

1613050	Winter	专业外语（园艺）	English for Specific Purposes	College of Agriculture and Biotechnology	Doctor	Zijingang Campus	1.0	The main contents of this course include: To introduce the textbooks, dissertations, or other reference materials (journal, conference papers, online information, etc) used in the Horticulture Department in European and American university, including the most updated science and technology in breeding, cultivation, postharvest and plant pathology of fruit, vegetables, and flowers; To introduce the basic special English for Horticulture, including vocabulary and language features; To improve the listening, speaking, reading, and writing ability of special English, which may lay foundation on good presentations in international academic communication.
1613061	Winter	科技论文写作(英)	Scientific Writing	College of Agriculture and Biotechnology	Master&Doctor	Zijingang Campus	2.0	The design of this course is particularly oriented for the current Ph.D/Master students major in agronomy and agricultural science related specialties in the College of Agriculture and Biotechnology. The purpose of the course is to give students detailed practical guidance on writing and publishing scientific papers, including theses. The course will help students to prepare manuscripts and effectively communicate their work. A step-by-step guide from the first draft to the final manuscript for submission to a publisher is provided. In addition, the course provides information on oral presentations and conference talks and posters.
1621050	Winter	植物生理生态学	Plant Physiological Ecology	College of Agriculture and Biotechnology	Master	Zijingang Campus	2.0	This course is designed to introduce plant carbon metabolism and transportation, plant and water relationship, as well as energy balance; physiological responses to light, temperature, water and nutrients for individual plants and population; and distribution pattern of plant growth and nutrients; interaction between plants and other organisms. The students are required to understand the theory of plant eco-physiology and to improve their ability in relevant research thought this course studying. In addition, we will make full use of educating elements related to this course and encourage students to perform research learning based on China's reality, to explore the unknown, the pursuit of truth sense of responsibility and sense of mission.

1621101	Winter	植物生物工程与技术	Plant Biotechnology and Technology	College of Agriculture and Biotechnology	Master	Zijingang Campus	2.0	The aim of this course was to introduce the principles of plant tissue and cell culture, protoplast culture and somatic hybridization, as well as transformation in gene engineering, and its associated techniques and methods, in sufficient detail to enable the students to understand them. The major contents include the principle and methods of plant tissue culture, plant cell culture, micropropagation, production of virus-free seedlings, anther and pollen culture, protoplast culture and somatic hybridization etc. The main experiments include several all-around experiments related to the methods of plant tissue and cell culture and model biotechnology.
1814089	Winter	脑疾病的神经生物学	Neurobiology of Brain Disorders	School of Medicine	Doctor	Zijingang Campus	2.0	This course examines the neurobiological foundations of brain disorders—including autism, psychiatric conditions, and neurodegenerative diseases (Alzheimer's/Parkinson's)—focusing on pathophysiology, genetic mechanisms, and emerging therapies. Employing a unique lecture + primary paper dissection format (3 papers per session), students analyze cutting-edge research on animal models, neuromodulation technologies, and therapeutic development. Designed to cultivate critical thinking and scientific communication skills, the textbook-free curriculum requires weekly paper critiques, two student presentations, and a final self-directed disorder analysis essay (30% weight). Assessment includes class participation (20%), paper critiques (20%), and presentations (30%).
1824003	Winter	局部解剖学（腹部）	Regional Anatomy of Abdomen	School of Medicine	Master&Doctor	Zijingang Campus	2.0	Regional Anatomy of Abdomen is designed to introduce the composition and morphological characteristics of the human abdomen, as well as the adjacent relationship between the location of structures that related to clinical practice. The course content includes abdominal wall layers, peritoneum, superior colic region, inferior colic region and retroperitoneum region. The course focuses on the acquisition process of human anatomy knowledge and the ideas and methods of scientific research. It is an important basic discipline of surgery, obstetrics and gynecology and imaging diagnosis, and has strong clinical application significance. At the same time, we refine the education elements related to this course, carry out the life education and gratitude education of "Silent Mentor", and cultivate students to become outstanding medical talents with international vision, benevolence, responsibility, truth and innovation.

2002002	Winter	研究生论文写作	Essay and Dissertation Writing for Graduate Students	School of Management	Master&Doctor	Zijingang Campus	1.0	Graduate students undertaking scientific research usually go through a series of training courses. In the first place there is ontology, a course that teaches students research paradigms that are ontologically different and how students need to situate their own research in their chosen paradigms. Secondly there is the course of epistemology and methodology, which trains students to use appropriate methodological tools, tools that are compatible with their chosen research objectives and ontological stances, to collect and analyse data. Finally, there is this course, which teaches students how to present research findings to an academic audience in order to make a persuasive argument. The course is available for all graduate students of the school of management.
2013089	Winter	战略管理研究前沿(英)	Frontier of Strategic Management Research	School of Management	Doctor	Zijingang Campus	2.0	<p>Strategy seeks to explain superior performance. Successful firms develop and implement corporate and business strategies that set their business apart from the competition and lay the foundation for sustained competitive advantage. Over the last five decades, strategic management has become a legitimate field of research. Many competing and complementary paradigms have emerged over time.</p> <p>This course exposes students to theories and topics that have had a significant impact on strategy research. It aims to train students to become informed researchers who are able to make contributions to this literature. The focus is on the most fundamental issues that define the field and lead the attention of scholars and practitioners toward a certain direction. During the course, we will discuss the origins and the development of strategic management in the last decades and review the various schools of thought and theoretical perspectives on strategic management. The content of this course is designed to stimulate students' research interest in this field, cultivate a rigorous academic attitude, and enhance their capability of adopting appropriate research methods and design.</p>
2021037	Winter	博弈论 (英)	Game Theory	School of Management	Master	Zijingang Campus	2.0	<p>This course begins with the definition of a game. We will explore the main topics related in game theory including static/dynamic games with perfect or imperfect information. Throughout the lectures, readings, homework assignments and course reports, the students are expected to learn how to use the following concepts to solve their problems.</p> <ul style="list-style-type: none"> <li>? Basic concepts in game theory</li> <li>? Nash equilibrium and applications</li> <li>? Mixed strategy Nash equilibrium</li> <li>? Subgame perfect equilibrium</li> <li>? Repeated game</li> <li>? Coalition game, core and Shapley value</li> <li>? Bayesian game</li> <li>? Perfect Bayesian equilibrium</li> <li>? Signaling game</li> <li>? Principal-agent theory</li> <li>? Adverse selection and signaling</li> <li>? Bargaining</li> </ul>

2021053	Winter	营销管理	Marketing in China	School of Management	Master	Zijingang Campus	1.0	<p>This course will introduce students to the frameworks and concepts of marketing in a cross-cultural context with the specific focus on China. It will allow students to explore and master marketing approaches in a global environment with emphasis on marketing and branding strategies, and consumption behavior in the Chinese context.</p> <p>Specifically, this course will cover the following topics: The principles of marketing; global marketing and branding strategy; intercultural communication and cross-culture consumer behavior; regional and social, demographic characteristics in China; new product development and launch strategy in China; distribution channel and retailing in China; marketing communication and social media marketing in China; pricing strategy in China; types of businesses and marketing challenges; marketing cross sectors.</p>
2041515	Winter	领导力与组织行为	Leadership and Organizational Behavior	School of Management	Master	Zijingang Campus	2.0	<p>In this course we examine the "people" issues in the management of organizations; issues like motivation, group dynamics, communication processes, cooperation and conflict, personality differences, learning, job design, leadership, decision-making, and others. We emphasize behavior, both our own and that of others, that contributes to organizational objectives. Because of solving any problem, implementing any plan, or reaching any goal in organizations requires the motivation and coordination of people, the subject matter of this course is an integral component of your management education. The nurturing goal of the course teaching is to shape healthy and positive professional values of MBA students on the basis of understanding the theory of employee behavior, build a positive organizational culture, internalize socialism values into their own spiritual pursuit and externalize them into practical actions of organizational management.</p> <p>We view behavior as a product of individual, group, and organizational influences and draw upon the concepts and theories of Organizational Behavior ("OB") to better understand behavioral processes at these levels. Our subject matter enables our class to serve as a laboratory. We use class/group activities and simulations to illustrate and dramatize issues that enable students to connect concepts to experience and theories in practice. Your individual learning, therefore, depends on your and others' active involvement in class activities. Group work also provides opportunities for students to develop teamwork and leadership skills. The course will take into account the background of Chinese socialism values and Chinese dream education, inspire participants to look into employee motivation and organizational culture in the context of digitalized and networked organizations, promote participants to think about the professional requirements of managers with Chinese cultural characteristics, and realize the fundamental task of moral education from spiritual internalization and action externalization.</p>
2041517	Winter	创新与变革管理	Innovation and Change Management	School of Management	Master	Zijingang Campus	2.0	<p>Over the past two decades, management of technology and innovation has steadily emerged as an important and challenging area for both academic research and industry practice. This course is to provide a foundation of managing technology and innovation. The teaching, reading, and discussion will focus on the concepts, frameworks, and practices for analyzing how firms can create, commercialize, capture and protect the values from industrial innovations. The following parts will be included in this course: (1) innovation and innovation management (what is 'innovation'? What is the essence of innovation management? How to understand and design "business model innovation"?); (2) innovation and strategy (how can we understand the dynamics of industrial innovation? How to formulate innovation strategy? How to protect the value from innovation? What are the context specificities of innovating in China and for China? ); (3) innovation and change management (esp., how to design innovative organizations? How to manage the organizational change induced by innovation? How to manage disruptive innovation and organizational change? ).</p> <p>Objectives</p> <ul style="list-style-type: none"> <li>? Gain insights about how innovation affects the competitive dynamics of markets; help managers and future managers better interpret their technological environments and identify meaningful trends</li> <li>? Understand the interaction between strategy and technology, and how firms can strategically manage innovation, and how firms can implement their innovation strategy to maximize their likelihood of success</li> <li>? Learn the skills for managing changes in innovation processes</li> </ul> <p>This course aims to cultivate innovative industrial management talents with solid professional knowledge, strong innovation consciousness, excellent innovation quality and scientific innovation skills, as well as innovative and leading talents with international vision, innovation ability, entrepreneurship and social responsibility. This course is oriented to the strategic needs of constructing innovative countries, and aimed at training the students' innovation ability, management ability and leadership change, encourage students to bear up under the national prosperity and rejuvenation, the people's happiness, with industry as its own duty lead the future development of senior professional managers in the world that is undergoing changes unseen in a century.</p>

2041520	Winter	商务统计分析	Business Statistical Analysis	School of Management	Master	Zijingang Campus	2.0	Business statistical analysis is fundamental to the management field. It is critical to apply the right statistical techniques and conduct appropriate statistical analysis for majority of management problems. Through the study of this course, students are expected to develop their knowledge and understanding of the fundamental principles of statistics for business and build the ability to use statistical methods to quantitatively analyze management problems. The course includes the following contents: a special topic on data (e.g. data sources, data types, etc.), data collection and acquisition, sampling and experimental design, probability and probability distribution, population and sampling distribution, parameter statistics and hypothesis testing, parametric tests (e.g. t tests), analysis of variance, correlation analysis and multiple linear regression analysis, and application of statistical software. Using case studies, students are expected to gain a better understanding of the importance of core socialist values, guide them to establish correct values and worldview, cultivate a sense of family and social responsibility, enhance national self-confidence and pride, and cultivate patriotic feelings. Full grasp of business ethics in management practices, as well as a comprehension of the "material first" concept of Marx's and key principles of statistics - honesty and practicality, the use of data to convey the truth in their future studies, job, and personal lives, is the goal. By combining Marx's "materiality first" attitude with the key principles of the statistics discipline - seeking the truth and pragmatism, utilizing data to reveal the truth — students at Zhejiang University will be able to become inventive individuals and a healthy force guiding the growth of China.
2043571	Winter	产品设计	Manufacturing and Environment	School of Management	Master	Zijingang Campus	3.0	Application of lean thinking in product design and development to create value and eliminate waste to achieve the goal of developing right product and product right.
2043701	Winter	技术领导力与知识产权	Technology Leadership and Intellectual Property	School of Management	Master	Zijingang Campus	1.0	This course provides an introduction of a few selected topics on technology leadership and intellectual property in the context of globalized world. The first lecture is centered on the basics of intellectual property rights system, which will familiarize students with basic types of intellectual property rights including invention patent, utility model, design, trademark, copyright and trade secrets, and some other types which are less often discussed, which include database, geographical indications, plant variety rights, and semiconductor topography rights. The second lecture offers theoretical insights into the issues how to capture value from innovation, which lays out a foundation for the discussion of technological leadership and intellectual property management. A deeper discussion will be conducted regarding strategic management of IPRs and a real-world case will be analyzed in this Session. The third lecture discusses the Chinese IPRs system, including its recent development and the challenges ahead, and the practice of protecting IPRs in China with a case. The fourth lecture focuses on the topic of open innovation and IP management and discusses how to effectively protect IPRs in an open innovation environment.

2043702	Winter	数据驱动的运营管理	Data-Driven Operations Management	School of Management	Master	Zijingang Campus	2.0	Operations Management aims to apply effective methods to integrate resources of firms to plan, organize and control value-adding processes. Data Driven Operations Management focuses on using statistical tools, optimization tools, data mining tools and simulation tools to assist companies achieving their operational strategies by utilizing enterprise information system and decision support system in a more efficient way.
2122002	Winter	高级操作系统	Advanced Operation System	College of Computer Science and Technology	Master	Yuquan campus	2.0	<p>The course content includes:</p> <p>Overview of operating system principles Linux operating system usage and kernel analysis, including: (1) Linux installation, kernel reconstruction, and usage; (2) Linux boot process and initialization; (3) Linux overall structure, system calls, process management; (4) Linux storage management; (5) Linux file systems and I/O management, module mechanism; (6) Special lectures on Linux-based application systems: Linux clusters, application servers, etc. Conduct group-based Linux course design, and select some groups for classroom exchange, with the following requirements: (1) Each group should not exceed 3 people; (2) The topic range is not particularly restricted, but it is recommended to choose from the following areas: A. Analysis of improved and new features in the latest Linux kernel versions; B. Redesign and implementation of Linux kernel modules, or addition of new modules; C. Construction of Linux-based application systems, such as embedded systems, cluster systems, etc.</p>
2124100	Winter	区块链安全	Blockchain security	College of Computer Science and Technology	Master	Yuquan campus	2.0	This course focuses on blockchain security, including blockchain cryptography, consensus security, smart contract security. Students will learn the basic concepts and the core technology of blockchain security, and get the skills of developing a secure blockchain and proving its security.

2142007	Winter	计算机网络安全	Computer and Network Security	College of Computer Science and Technology	Master	Yuquan campus	2.0	<p>In this course, student will learn the fundamental principles of computer and network security by studying attacks on computer systems, network, and the Web. Students will learn how those attacks work and how to prevent and detect them. The course emphasizes "learning by doing", and requires students to conduct a series of lab exercises. Through these labs, students can enhance their understanding of the principles, and be able to apply those principles to solve real problems. After completion of the course, students should be able to possess the following skills:</p> <ul style="list-style-type: none"> <li>be able to explain security principles,</li> <li>be able to evaluate risks faced by computer systems,</li> <li>be able to explain how various attacks work,</li> <li>be able to describe and generalize various software vulnerabilities.</li> <li>be able to detect common vulnerabilities in software,</li> <li>be able to analyze and evaluate software systems for its security properties,</li> <li>be able to explain how various security mechanisms work, and correlate these security mechanisms with security principles,</li> <li>be able to compare various security mechanisms, and articulate their advantages and limitations,</li> <li>be able to apply security principles to solve problems</li> </ul>
2221229	Winter	社会科学方法论	Social Sciences Methodology	School of Public Affairs	Master	Zijingang Campus	2.0	<p>The Methodology of Social Sciences</p> <p>1. Course Introduction. What is "science"? The basic characteristics of science. Comparative analysis of social science and natural science. Historical development of the methodology of social sciences. The significance of methodology.</p> <p>2. Foundations of Social Sciences. Empirical foundation of social sciences. Theoretical foundation of social sciences. Logical foundation of social sciences. Humanistic value foundation of social sciences.</p> <p>3. The nature of Social Sciences. Social science as "the science of humankind". Social science as "the science of fact". Social science as "the science of culture". The value free of social science.</p> <p>4. Functions of Social Sciences. The function and classification of social sciences. The implementing mechanism of the function of social sciences. Social sciences in the process of human civilization.</p>
2221231	Winter	现当代社会理论	Contemporary Social Theory	School of Public Affairs	Master	Zijingang Campus	2.0	<p>In this course, we will explore both the development and application of contemporary social theory. Contemporary theory, as a sub-discipline is both an account of the historical emergence and further expansion of a category of theoretical work explicitly aimed at identifying and building on a body of "classical" theoretical works – a process that starts with Talcott Parsons. However, contemporary theory is also a discussion of the current trends in sociological theoretical work.</p>

2223140	Winter	中国政治与外交研究	China's politics and Diplomacy	School of Public Affairs	Master	Zijingang Campus	2.0	<p>The rise of China is one of the most important developments of our era. Within 30 years, China has transformed from a poor and isolated country to an economic and political power with growing influence in the global system. This is an ongoing process, and it is difficult to predict how it will continue. This course examines the rise of modern China, the reforms it is going through and its integration within the global system, focusing mainly on its foreign policy and national security.</p> <p>The course objective is to familiarize students with the basic characteristics and motives of China's foreign policy and national security through analytical presentations of major fields, concepts and historical events.</p>
2223217	Winter	发展理论与现代化	Development Theory and Modernization	School of Public Affairs	Master	Zijingang Campus	2.0	<p>This course aims to discover the distinctive theories of social development from 18th century, then we focus on some particular theories about the non-western social modernization in the 20th. We will trace the theoretical trajectory from Henri de Saint-Simon , Auguste Comte, Herbert Spencer, via émile Durkheim, Max Weber, then Pearsons and finally ending with Karl Marx and his Marxist successors like Immanuel Wallerstein. The course involves with an amount of statements and theories by many so-called "classical" sociologists about their views on social development. The core of this course is emphasized on Karl Marx, especially his ideas of "world history" and we discuss what his thoughts means in terms of our currently situations on thinking of non-western social development. We hope through this course, students would have efficient discoveries and discussions about the contemporary Marxist social developmental theories.</p>
2223319	Winter	外交政策研究	Foreign Policy Analysis	School of Public Affairs	Master	Zijingang Campus	2.0	<p>Foreign Policy Analysis (FPA) examines foreign policy in terms of a) policy substance (contents of foreign policies) and b) policy formulation (how foreign policies are being made). It focuses on the actors and processes involved in foreign policy decision making. It seeks to understand the contexts, pressures and constraints in which foreign policies are being shaped and made, with reference to the foreign policies of the major powers in the world (e.g. the United States, the Soviet Union/Russia, China, Japan, India, Great Britain, France). It also looks at non-state actors and the wider environment in which states and peoples communicate and contact with the outside world.</p>

2223357	Winter	区域研究	Area Studies	School of Public Affairs	Master	Zijingang Campus	2.0	Area Studies is designed for students at graduate level. It covers areas, such as European Union, or America and its relations with other great powers and regions. Closely linking to the current important global issues, it aims to deepen students' understandings about the studied region, its economic, cultural and political developments and their implications to global international society. We also attempt to locate China's rise and its impact in the related areas studies. Students are required to engage in substantial way to participate in depth class discussions.
2223416	Winter	非营利组织管理	The Nonprofit Sector	School of Public Affairs	Master	Zijingang Campus	2.0	This course serves as an advanced introduction to Public Administration (PA) research on the nonprofit sector. In this course, we will examine the scope of the nonprofit sector from a comparative perspective, assess competing theoretical frameworks that account for its existence, composition and internal management, and analyze its relationship with the market and the government.
2223454	Winter	全球公共政策	Global public policy	School of Public Affairs	Master	Zijingang Campus	2.0	The course will exam a range of issues related to global public policy: concepts and their disciplinary basis; the role of state and non-state actors; the policy toolbox from classic intergovernmental cooperation to novel forms of governance such as transgovernmental networks, multistakeholder initiatives, and self-regulation by non-state actors; the policy making and implementation process in the global level; the diversified policy objectives and values. Meanwhile, the seminars will apply the analytical tools provided in the lectures to case studies, in realms of global public security, protection of cultural diversity, international standards, UN sustainable development goals (SDGs), and emerging technology governance , etc. Students are expected to grasp the knowledge thoroughly, and develop their independent judgement and critical thinking.

2223463	Winter	自然资源政策分析	Natural Resource Policy Analysis	School of Public Affairs	Master	Zijingang Campus	2.0	<p>The course Natural Resource Policy Analysis serves as a professional course for master and PhD students in Zhejiang University. It consists of two components: a) The theory, approaches and typology of natural resource policy analysis. b) The state of the art in natural resource policy analysis practices and the challenges with implications for policy recommendations. The course will be operationalized by pooling teaching, role plays and discussions.</p>
2313023	Winter	媒介与全球化	Media and Globalization	College of Media and International Culture	Doctor	Zijingang Campus	2.0	<p>There is practically no globalization without media and communications. Their role is so obvious that it sometimes overlooked. As early as in the nineteenth century the first electronic media in the form of news agencies compressed space and time by using the telegraph. Today, television provides a constant flow of pictures from overseas, and the Internet connects individuals instantaneously despite the distance between their locations. Hence, media and communications have become the major way to have global experiences without actually having to leave home. For many people globalization becomes a mediated experience.</p> <p>Globalization theorists acknowledge the importance of the role of media and communications and see it as either a primarily economic one or as one which enables individuals' experience of the global. But what is the role of media and communications in the processes of globalization? Is it only technology that matters? Do media and communications only connect or do they mediate as well? Who owns global media? Do people have equal access to global media? Is there any chance for cosmopolitanism?</p> <p>The aim of this course is to explore and demonstrate the role of the media and communications in the processes of globalisation by introducing the relevant literature, by examining various theories of globalisation and by identifying their relevance in understanding the media.</p>
2343054	Winter	中国文化表达专题	Presenting Chinese Culture by Subjects	College of Media and International Culture	Master	Zijingang Campus	2.0	<p>This course will teach different topics of Chinese culture in English, including Chinese philosophy such as Confucianism, Buddhism, Taoism and social values, Chinese character and culture, Chinese opera art, Chinese calligraphy, Chinese tea culture and so on. At the same time, students will be trained to express Chinese culture in English while understanding Chinese culture, and have certain ability to express Chinese culture, so as to make corresponding quality preparation for the international communication of Chinese culture.</p>

2423069	Winter	软物质结构与力学	The Structure and Mechanics of Soft Matter	School of Aeronautics and Astronautics	Master	Yuquan campus	2.0	Soft matter mechanics is a new direction of mechanics. And its research plays an extremely important role in promoting the joint development of multiple disciplines. The structure of soft materials is very complex, and the forces between structural units in soft materials are weak. The forces that play a small role in general fluids and solids, such as surface forces, interface forces and van der Waals forces, often play a dominant role in soft materials. Understanding the characteristics of different hierarchies of soft matter is very important to understand the complex constitutive relations of soft matter, including the new concepts such as rheology, large deformation and entropy. The research object of The Structure and Mechanical Properties of Soft Matter is the relationship between the chemical composition and different level of internal structure of soft materials and mechanical properties, which plays a fundamental and important role in the research of soft material mechanics. This course mainly introduces the basic process and theory of material formation and structural development. It aims to understand the mechanical properties of soft materials and guide the structural design of soft materials by understanding the basic principles from material atoms to structure level. The lectures focus on electron (wave-particle duality, etc.), atomic structure, chemical bond (including primary bond and secondary bond), valence bond theory (orbital hybridization theory), molecular orbital theory and other basic concepts of material structure, as well as the special mechanical properties of soft materials, such as viscoelasticity, strain rate and temperature dependence, etc. Through the study of this course, students will have a clear overall understanding of the influence of material structure on mechanical properties, and master the basic physical theories and research methods in the process of designing and developing new soft materials.
2613002	Winter	计算材料科学	Computational Materials Science	School of Materials Science and Engineering	Master&Doctor	Zijingang Campus	2.0	This course provides an introduction to the present status and future possibilities for computational materials science, covering atomistic and molecular simulation, continuum methods, and materials informatics and machine learning. The lectures provide exposure to areas of application based on the scientific exploitation of the power of computation, specifically in the area of materials science and engineering.
2711006	Winter	人因振动工程	Human responses to vibration	College of Energy Engineering	Doctor	Yuquan campus	2.0	《Human responses to vibration》 is a multidisciplinary course that combines knowledge of Vibration Theory, Measurement and Signal Processing Techniques, Psychology, Physiology, and Statistics. It is a course for helping postgraduate students specialising energy and environmental system engineering and vehicle engineering to understand and comprehend the relationship of engineering and human body. The main purposes of this course are to enable the students understand and grasp relevant principles and knowledge on human responses to vibration, to understand effects of vibration on human body, and to integrate the knowledge into practical applications. The course will benefit students in broadening their theory and knowledge in engineering field, enhancing their ways of thinking and solving engineering problems, cultivating their ability to get access to internal and external literature, closely tracking research hotspots nationally and internationally and mastering the state of foreign research. It is also expected that the course will help for students to develop collaborative and team work skills, and enhance their ability in writing report and making presentation publically.

3023135	Winter	智能固态照明技术	Intelligent Solid State Lighting Technology	College of Optical Science and Engineering	Master	Yuquan campus	2.0	<p>The module is designed to understand the measurement and quality of solid state sources such as LED sources. The source has many advantages comparing with conventional sources such as energy saving, low carbon footprint, longer life and most importantly, adjustable spectral power distribution. The latter makes it adaptable to different environment. However, it has different physical properties such as small size and spatial arrangement. Hence, various conventional quality measures need to be improved for solid state sources, such as glare, colour rendering, flicker, etc.</p> <p>This module will be divided into 7 parts. (1) general lighting light source technology, solid-state light source lighting principle and manufacturing process; (2) Human visual system, color science theory required for color rendering index calculation; (3) Measurement principle and standard of solid-state light source, including instrument principle and actual measurement; (4) The theory of psychophysics uses light quality indicators as research examples to explain psychophysical experiment design and data analysis methods. (5) Solid state light source quality indicators, including a variety of color rendering indexes, whiteness, glare, luminous efficiency, uniformity, flicker, etc; (6) Effects of solid-state light sources on health, biorhythm, work efficiency, physiological measurement. (7) Principle and application of intelligent lighting. Refine the ideological and political value and spiritual connotation contained in the knowledge system of colorology, appropriately increase the humanistic nature of the curriculum, and enhance the timeliness and openness. Combine the teaching of subject methodology with the cultivation of scientific spirit to improve students' ability to correctly understand, analyze and solve problems.</p>
3113405	Winter	三维集成与封装建模与设计	Modeling and Design of 3-D Integration and Packaging	College of Information Science and Electronic Engineering	Doctor	Yuquan campus	2.0	<p>The brief introduction of this course is given as follows.</p> <ol style="list-style-type: none"> <li>1. 2-D RF integrated circuits (SoC, RFIC, and MMIC);</li> <li>2. Advanced CMOS/GaAs/GaN Technologies;</li> <li>3. Modeling techniques for new transistors (Fin FET &amp; GFET&amp;CNTFET) ;</li> <li>4. Modeling techniques for 3-D interconnects;</li> <li>5. Hybrid simulation methods for 3-D integrated circuits (3-D ICs);</li> <li>6. Multiphysics compatibility design forhigh performance 3-D integrated structures;</li> <li>7. Advanced carbon nano materials for 3-D ICs;</li> <li>8. Advanced system-in-packaging (SiP) technologies;</li> <li>9. Signal integrity and power integrity designs for 3-D ICs and SiP;</li> <li>10. Final Project Presentation and Discussion.</li> </ol>
3222003	Winter	矩阵分析与数值计算(英)	Matrix Analysis and Numerical Calculation	College of Control Science and Engineering	Master	Yuquan campus	2.0	<p>Matrix analysis and numerical calculation are useful tools of basic interest and has applications in scientific computing, control and systems theory, operations research, mathematical physics, statistics, economics and engineering disciplines. Sometimes it is also needed in other areas of pure mathematics.</p> <p>In this course, the following contents will be discussed carefully, mainly containing but not limited to: Linear Space, Inner Product Space and Normed Linear Space; Matrix Similarity and Unitary Similarity; Matrix Factorizations and Decompositions; <math>\lambda</math>-Matrix and Canonical Forms of Matrix; Algorithm Analysis; Numerical Solution of Linear Equations; Numerical Solution of Ordinary Differential Equations; Numerical Calculation of Eigenvalues.</p>

3223015	Winter	三维视觉和时空计算	3D Vision and Time-Spatial Computing	College of Control Science and Engineering	Master	Yuquan campus	1.5	One of the most important capability for robots to achieve full autonomy, augmented/virtual reality, architectural and land surveying to work is the ability to perceive and digitalize the 3D environment. This module covers the mathematical concepts and algorithms that allow us to recover the 3D geometry of the camera motions and the structures in its environment. Topics include projective geometry, camera model, camera pose estimation and 3D reconstruction. We will also look into the cutting edge research on 3D point clouds and neural fields representation.
3811100	Winter	天气气候与环境	Weather, climate, and environment	School of Earth Sciences	Doctor	Zijingang Campus	2.0	Weather, climate, and atmospheric environment are three key components of the atmospheric sciences. This course provides an overview of the key scientific issues in weather, climate, and atmospheric environment pertinent to the broad topic of atmospheric sciences. The main topic of this course includes, but not limited to: global and regional climate change, major climate mode and global monsoon, extreme climate and weather, atmospheric radiation and remote sensing, atmospheric aerosol and chemistry. In the class, students and instructors will interact with each other to explore a variety of topics on interactive feedbacks between weather, climate, and atmospheric environment across different spatial and temporal scales.
3813031	Winter	科技论文写作	Scientific Paper Writing for Postgraduate Students	School of Earth Sciences	Master&Doctor	Zijingang Campus	1.0	<ol style="list-style-type: none"> <li>1. Research and publishing Ethics: Authorship; Conflict of interest; Plagiarism; Simultaneous submission; Research fraud (Fabrication/manufacture--Making up and Falsification—Manipulating); Salami slicing; Citation stacking</li> <li>2. Structure of a scientific paper</li> <li>3. Title Abstract, and Introduction/ Main body/Discussion</li> <li>4. References, Appendices, Table, and Figures/Discussion on selected papers, Questions&amp; Answers</li> </ol>

4013045	Winter	后现代建筑史	History of Postmodern Architecture	School of Art and Archaeology	Doctor	Zijingang Campus	2.0	<p>The designation of Postmodernism is itself a kind of historical conundrum. To be postmodern necessarily invokes the central principles of early twentieth-century modernism, as well as the “long” history of western modernity since the Enlightenment. Paradoxically, postmodernism differentiates itself against the modern by being both a condition and a reaction. As such, while it is fairly straightforward to identify Postmodernism as a movement in art and architecture, it is much more difficult to ascribe to it a particular history. While its effects could be generally felt amongst the various cultural fields of literature, philosophy, music, or art, some of its most pointed manifestations are found in the discourse of architecture, and in particular architecture’s relationship and contribution to broader society.</p> <p>Seen primarily through the lens of architecture, this course will provide a critical reflection on the tenets and promises of high modernism, as well as the assumptions associated with their challenge or rejection. Rather than a pure survey of postmodern architects and artists, this course will focus on the cultural stakes of twentieth century post-war western aesthetic discourses. Finally, the course will question the usefulness of postmodernism as a designation in the contemporary situation, especially in light of a globalized field of art.</p> <p>This course will encourage students to conduct research, as well as cultivate their sense of responsibility and purpose to explore the unknown and pursue the truth. It will promote students’ development in independent learning, healthy growth, responsibility, and practical innovation.</p>
4621095	Winter	日语语言学概论	An introduction to Japanese linguistics	School of International Studies	Master	Zijingang Campus	2.0	<p>This course is an introduction to linguistics studies in Japanese. a variety of themes that that have been central to linguistics shall be covered: the principal areas of linguistics: theoretical linguistics, applied linguistics, social linguistic, corpus linguistics, computational linguistics, natural language processing. In particular, we shall focus on framework and methodology. Students are expected to acquire the ability to critically think and independently learn.</p>
4621096	Winter	国际日本学研究	International Japanese Studies	School of International Studies	Master	Zijingang Campus	2.0	<p>This course covers a wide range of Japanese studies, including Japanese literature studies, Japanese linguistics studies, Japanese social system studies, Japanese history studies, Japanese culture studies, multicultural symbiosis and cross-cultural education studies, cultural relations and cultural change studies, cross-cultural communication studies, and Japanese ideology studies. This course aims to cultivate talents with broad vision and highly specialized knowledge in Japanese studies, broaden students’ horizons, and lay the foundation for interdisciplinary research.</p>

0121041	Fall	计量软件与应用	Econometric Software and Application	School of Economics	Master	Zijingang Campus	2.0	This course will equip students with substantial knowledge of Stata so that they can use it for econometric analyses in their research projects, such as senior honors thesis. Using real datasets, students will learn how to use Stata to read and manipulate data, and to produce reliable results. The course will therefore focus on the practical aspect of data analysis rather than econometric theory. The course will also highlight many common pitfalls that beginning researchers often fall into. This course aims to encourage students to pursue truth and righteousness while learning how to be an unbiased and independent thinker
0123139	Fall	经济预测方法	Applied Forecasting Methods	School of Economics	Master	Zijingang Campus	2.0	This course is designed as a sequel to Introduction to Econometrics and Intermediate Econometrics, and focuses on forecasting. Forecasting is important, as forecasts are constantly made in business, economics, government, finance, and many other fields and much depends on them. This course will introduce you to econometric time-series models and methods that can be used to generate forecasts. A wide range of topics are going to be covered, including basic concepts of forecasting, forecasting trends and seasonality, ARIMA processes, combination of forecasts, evaluation of forecasts. Upon successful completion of this course, the students are expected to master basic properties of modern forecasting models, and be able to skillfully select appropriate forecasting models to fit real data sets and generate their own forecasts.
0509652	Fall	博士生学术英语写作面对面	Academic English Writing for graduate Students	School of International Studies	Master&Doctor	Zijingang Campus	2.0	This online-and-offline combined course is designed to help non-English major students to grasp key points of academic English writing. It introduces literature reading, framework, writing logics and language style in academic writing. In the multicultural context, this course introduces features of academic writing. With lectures and practice, and also related mooc resource, it aims at improving students' understanding of academic writing. Also this course gives instruction to students' practical writing so as to help them to grasp fundamental knowledge of academic writing, laying a good foundation for later professional development. This course clarifies the purpose of academic writing to improve students' international competency.

0521060	Fall	英美文学经典研究	English Classics Studies	School of International Studies	Master	Zijingang Campus	2.0	This course focuses on the literary criticism of Classic English and American works, and systematically expounds the ideas, methods and norms of foreign literature research. The course includes 8 weeks with 4 periods per week. The contents include: introduction to academic research; close reading; Literary ethical criticism; Chinese poetics criticism; Empirical research; Formal research; Theoretical research. Every week, selected research examples will be given in the form of academic lectures to explain research ideas, perspectives, methods and norms to students. The goal is to cultivate and improve the research ability and research realm of students. The course is interdisciplinary. It encourages students to examine and study world literature based on Chinese culture, cultivates students' sense of responsibility and mission, and intends to promote students' development in independent learning, healthy growth, responsibility and innovation.
0521084	Fall	文化与翻译	Culture and Translation	School of International Studies	Master	Zijingang Campus	2.0	Culture includes the beliefs, rules of behavior, language, ritual, art, technology, style of dress, ways of producing and cooking food, religion and political and economic systems. Language differences constitute the basis of translation, so translation starts from the comparative studies of languages; Language is a component of culture and also a carrier of culture. This course is designed to give a detailed description of the interactions between translation and culture against the backdrop of the development of translation in Chinese and Western cultures. It is expected that the course helps fresh graduates understand the characteristics of translation, the differences of languages in terms of thinking patterns, cultures and linguistic features, so they grasp the relationships between translation and the cultural constituents from a diversity of perspectives, e.g. silk text and intangible culture heritage. In this way the graduates can be clear about real language services, the academic room for studies on translation practice and theories and so on. Meanwhile, with a multifaceted variety of translation practice, discussions and interactions, the course aims to enhance Chinese students' cultural literacy and cross-cultural communication skills and to establish correct cultural values in translation, while allowing students to experience the profundity and diversity of traditional Chinese culture and cultivate cultural self-confidence implicitly.
0523110	Fall	句法学基础	Syntax: Fundamentals of Syntactic Analysis	School of International Studies	Master	Zijingang Campus	2.0	The course provides an introduction to syntactic analysis. It strives to establish a basic understanding of key concepts of syntax such as: constituent, word, phrase, clause, constituency, dependency, government, head, dependent, predicate, argument, adjunct, subordination, coordination, right node raising, c-command, X-bar theory, discontinuities (fronting, topicalization, scrambling, extraposition), ellipsis (gapping, stripping, VP-ellipsis, pseudogapping, sluicing, etc.), etc. Emphasis will be put on representing syntactic structures using tree representations. Ideological integration points: The course emphasizes the importance of language in the process of internationalization and in cultivating international perspective. It encourages the correct use of language as to appropriately reflect moral and ethical integrity. It promotes awareness of the English language and thus of other languages as well. It thus promotes self-discipline through reflection.

0711029	Fall	植物分子生理学	Plant Molecular Physiology	College of Life Sciences	Master&Doctor	Zijingang Campus	2.0	This course is designed for graduate students in plant biology, crop sciences and others interested in obtaining an in depth treatment of the molecular physiology of plants. In this lecture, basic concepts and problems common to higher plants will be addressed, with an emphasis on molecular aspects of nutrient physiology. Topics to be covered include molecular mechanism on nutrient acquisition, translocation, hormones signaling and nutrient acquisition and transportation, nutrient and plant development, and plant responses to abiotic stresses.
0821063	Fall	高等传热学	Advanced Heat Transfer	College of Energy Engineering	Master	Yuquan campus	2.0	
0821064	Fall	现代热物理测试理论与技术	Modern Thermal Physics Measurement and Experimental Theory	College of Energy Engineering	Master	Yuquan campus	2.0	Measurement methods and techniques are the skills that must be mastered by graduate students in the disciplines of "Power Engineering and Engineering Thermophysics" who are engaged in scientific research institutes. Accurate measurement of basic physical quantities is a prerequisite for understanding and mastering combustion processes, multiphase flows, cryogenic refrigeration and chemical processes. In recent years, advanced thermophysical testing technology, especially non-contact real-time measurement technology represented by optical measurement technology, has developed rapidly. Starting from the introduction of the basic knowledge of light scattering and spectroscopic, this course systematically teaches the velocity, concentration, particle size, temperature of reactants, fuels, pollutants, combustion intermediates and other substances in complex heterogeneous reaction systems involved in the field of engineering thermophysics. Advanced measurement technologies for physical quantities such as components, including laser/phase Doppler measurement (PDA), particle image velocimetry (PIV), laser-induced fluorescence spectroscopy (PLIF), laser-induced white light (LIJ), tunable Semiconductor Laser Absorption Spectroscopy (TDLAS), etc. Through the study of this course, students can have solid foundation for further in-depth research in the future.

0821065	Fall	动力工程数值计算	Dynamics Engineering Numerical Calculation	College of Energy Engineering	Master	Yuquan campus	2.0	<p>The course is designed for the graduate students to understand the numerical methods of thermal conduction, convection and radiation heat transfer with selected examples in engineering. Numerical methods in heat conduction, such as finite difference approach Numerical methods in convection includes governing conservation equations、 control volume method、 numerical solution of the full equations (central difference、 upwind and other differencing schemes) 、 SIMPLE approach in solving convection problems. Numerical techniques for radiation heat transfer are analyzed. Combustion simulations accompanied with Fluent software and other methods such as DNS, LES and DES. The course is fit for the need of graduated students' training for the specialities of power engineering and engineering thermal physics.</p> <p>The course is also focusing on teaching the students the processes of learning knowledge of chemistry, the ideas and methods of scientific researches. The contents of this course have clear characteristic of current age and significant feature of multidiscipline cross-teaching.</p>
1011110	Fall	智能配电网技术	Smart Electric Power Distribution Systems	College of Electrical Engineering	Doctor	Yuquan campus	2.0	<p>New methods for automation and intelligent systems applications, new trends in telecommunications, and a recent focus on renewable energy are reshaping the educational landscape of today's power engineer. Providing a modern and practical vehicle to help students navigate this dynamic terrain, Electric Power Distribution, Automation, Protection, and Control infuses new directions in computation, automation, and control into classical topics in electric power distribution. This course works systematically through basic distribution principles, renewable energy sources, computational tools and techniques, reliability, maintenance, distribution automation, and telecommunications. Numerous examples, problems, and case studies offer practical insight into the concepts and help build a working knowledge of protection schemes, fault analysis and synthesis, reliability analysis, intelligent automation systems, distribution management systems, and distribution system communications.</p>
1022138	Fall	现代控制理论	Modern Control Theory	College of Electrical Engineering	Master	Yuquan campus	2.0	<p>The basic contents of the course include: the basic concepts of state variables, state vector, state space, state trajectory and the state space description of dynamic systems; state space representation of dynamic systems, state equation and transfer function of mutual transformation, linear system state space representation of the diagonal normal form and Jordan normal form transform; the definition, nature and solution of the state transition matrix, and the solution of the state space equation; the definition of the Lyapunov stability criterion, application of Lyapunov stability criterion in linear systems and nonlinear systems; the definition, criteria, standard form, decomposition and the dual principle of controllability and observability of linear systems; the design of linear feedback control systems (including pole assignment, stabilization problem, decoupling control problem and state observer); the basic theory and method of optimal control (including linear quadratic optimal control, minimum principle and its application in time optimal control); the basic theory and method of optimal state estimation (including least squares estimation, linear least variance estimation, and Kalman filtering). Analysis of Specific Examples of Modern Control Theory.</p>

1023105	Fall	电动汽车和混合动力汽车系统	Electric and Hybrid Vehicle Propulsion Systems	College of Electrical Engineering	Master	Yuquan campus	1.0	Introduction to electric and hybrid vehicles. This course will introduce the hybrid vehicle architectures, including the series hybrid vehicle architectures- range extender and full hybrid systems, parallel hybrid architectures and plug-in hybrid architectures. This course will introduce the propulsion system analysis , including the basic mechanics of a vehicle, energy consumed in a vehicle, powertrain component sizing, vehicle simulation, gear trains, driving cycles: city cycle, highway cycle, and combined cycle, energy requirements, fuel cell technology and fuel cell vehicles. This course will introduce the energy storage, including the battery energy storage, ultracapacitors, flywheels, electric motor drive systems, induction motors, PM motors, other types of motors, power electronic converters for electric and hybrid vehicles. Energy management and charging, including charging strategies, APUs, vehicle to grid. Characteristics of commercially available hybrid vehicles, including the Toyota Prius and Camry hybrid, Chevy Volt and Honda Insight.
1311141	Fall	农业系统和装备自动化	Agricultural Systems and Equipment Automation	College of Biosystems Engineering and Food Science	Doctor	Zijingang Campus	2.0	Course overview: The crucial goal of agricultural research and technology development in the 20th century has been to provide humanity with enough food, feed and fiber. Agricultural mechanization has made revolutionary change in crop production technology and made it possible to harvest sufficient products to meet continuously growing needs. The challenging task facing agricultural producers today is how to provide the consumers with sufficient quality products, defined by perspectives including nutritional quality, safety and security, as well as the environmental impact in producing it. The core technology beyond modern agricultural production management is agricultural automation. This course will first give an overall introduction to agricultural automation; followed by brief overview of fundamentals to composing elements of agricultural automation.
1611505	Fall	植物生理与分子生物学	Plant Physiology and Molecular Biology	College of Agriculture and Biotechnology	Doctor	Zijingang Campus	2.0	<p>Plant growth and development, from germination of seeds to vegetative growth, flower initiation and development, fertilization, fruit set and development, maturation or ripening and finally to the next generation seed formation, is eventually genetically programmed and under the control of internal and external factors. Studies on physiology and molecular biology of plants are essential for elucidating biological phenomena and exploring manipulations for production of products in high yield and high quality.</p> <p>Physiological and molecular biological studies on plants has marched into a fast developing stage, as evidenced by comprehensive merge of traditional techniques at botanical, physiological, biochemical levels and modern techniques at molecular, biotechnological, and especially quite recently, omics and bioinformatic levels, as well as by integrated research findings at multi levels of physiology and biochemistry, molecular biology and omics, as well as integrative biology and system biology.</p> <p>Therefore, incorporating research cases from Zhejiang University and the University of Nottingham at UK, as well as typical and latest advances in plant biology area, the course aimed to lecture on selected topics in plant growth and development that are important in horticulture and other crops.</p>

1613051	Fall	专业外语（作物学）	Scientific English	College of Agriculture and Biotechnology	Doctor	Zijingang Campus	1.0	
1621049	Fall	植物生长发育与调控	Plant Growth, Development and Regulation	College of Agriculture and Biotechnology	Master&Doctor	Zijingang Campus	2.0	This course aims to introduce to the student what are the basic concept of plant growth and development, embryogenesis and plant regeneration. The course will also discuss plant hormones and growth regulators, crop stress physiology and tolerance, secondary dormancy and volunteer in rapeseed, herbicides and their resistance, parasitic plants and allelopathy, ideal plant architecture and heading-date in crops, nitrogen use efficiency and disease and insect resistance in crops, and digital crop management and shaping the future of agriculture. The language used in the course can be English.
1711028	Fall	动物细胞与发育生物学	Animal Cell and Developmental Biology	College of Animal Sciences	Doctor	Zijingang Campus	2.0	As a basic course in the field of animal science and animal medicine, the course Animal Cell and Developmental Biology aims to enhance students' understanding and interpretation of life phenomena at the cellular and molecular levels. Through the study of the course, students will be able to master the knowledge about the structure and functions of the cells along with its correlation to the developmental changes, and its regulation mechanism at the molecular level, in order to further understand the regulation of animal body functions. The contents of this course include the concepts of cell and developmental biology, main experimental methods used in research of animal cells and developmental biology, biomembranes and transmembrane transport, cytoskeleton and cell movement, cell energy metabolism, gene expression, protein biosynthesis and processing, transmembrane signal transduction, cell proliferation and differentiation and death. Through the study of this course, students will master the basic theory of cell structure, function and regulation, and understand the progress related to this course.

1713029	Fall	泌乳生理学	Physiology of Lactation	College of Animal Sciences	Doctor	Zijingang Campus	2.0	The course "Lactation" is a selective course for the doctoral candidates majoring in animal nutrition and feed sciences, basic veterinary and clinic veterinary sciences. The main contents include the structure and function of lactation animal mammary glands, milk production and secretion, endocrine and neural regulation of lactation; Rumen metabolism and its regulation, energy balance and measures for imbalance, protein and amino acid nutrition, development and utilization of unconventional feed, feed efficiency in dairy animals; Metabolic disorders, reproductive disorders, mastitis and their prevention and treatment in dairy animals. Through the study of this course, students are required to master the milk lactation physiology and its research status and prospects for future topics, and lay a good foundation for their engaging in scientific research. As an important part of Chinese agriculture, the dairy industry has developed rapidly in recent years, but it is still the weak area of livestock husbandry. The development of the dairy industry will make full use of unconventional feed resources, alleviate the contradiction between human and animal competition for food, and promote the sustainable development of animal industry. By introducing the current situation of China's dairy industry and its gap with developed countries, students are encouraged to conduct research based on the motherland, students' consciousness and sense of use will be trained to explore the unknown and contribute to the country, and finally this course will promote students to learn independently, grow healthily, and take responsibility, and then their practice Innovation and other aspects will be developed.
1913048	Fall	纳米给药系统	Nanoparticle Drug Delivery Systems	School of Medicine	Master&Doctor	Zijingang Campus	2.0	The course of nano-size drug delivery system is based on the progress of nanoscience. It describes the construction, characterization, toxicity evaluation, in vitro and in vivo methods of drug/gene nanosized vectors such as liposomes, micelles, nanoparticles, and introduces Chinese pharmacologists and scientists to enhance students' awareness of hard working and serving the national health strategy.
1913080	Fall	药物递送器件：创新与转化	Drug Delivery Devices: Innovation and Translation	School of Medicine	Master&Doctor	Zijingang Campus	2.0	This course introduces students to modern topics in the area of drug delivery devices and relevant biomedical applications. Each topic will provide a comprehensive and critical examination of current and emerging research and development on drug delivery devices, with an emphasis on innovation and translation, aiming to encourage students to think open-minded, create drugs innovatively, and endeavor to become pharmacists with responsibility and mission. Topics will include bioresponsive drug delivery systems, drug delivery reservoirs, MEMS and micro/nanorobots for drug delivery, nanomedicine-device combination products and development and regulation of drug delivery devices.

2009516	Fall	零碳创新与战略	Innovation and Strategy for Carbon Neutrality	School of Management	Master&Doctor	Zijingang Campus	1.0	Facing the challenges of carbon peak and carbon neutrality, firms need understand the policy, take the innovation and entrepreneurship opportunities, make and conduct strategies in order to achieve the sustainable and high-quality development of firms and society. This course is to provide a foundation of dealing with innovation and strategies for carbon neutrality, especially those in the manufacturing industry. The teaching, reading, and discussion will focus on the concepts, frameworks, and practices for analyzing how firms can face carbon issues, benefit from the innovation, strategy and management for zero-carbon emission. The following parts will be included in this course: Concepts of the carbon neutrality, sustainable development; strategy for carbon neutrality and sustainable development; Technology and Innovation for carbon neutrality; Digital transformation and carbon neutrality; Environmental Management System (EMS) and Environmentally Benign Manufacturing (EBM).
2011059	Fall	组织理论	Organization Theory	School of Management	Doctor	Zijingang Campus	2.0	This course is designed primarily for graduate students major in management, and builds around a series of class sessions organized to offer an opportunity for students to understand organization theory through different theoretical perspectives. Each perspective draws attention to significant aspects of the organization and organizing process, and provides a distinctive means of understanding and managing organizational situations. This course will help you learn about how to use these perspectives as tools for observing and analyzing organization in the real world. This course will help PhD students to stand on the frontiers of organization theory studies, and to embed in the Chinese context, and to become the management researchers with scientific thinking and social responsibility in new era.
2013088	Fall	高阶消费者信息处理与决策	Advanced Seminar of Consumer Information Processing and Decision Making	School of Management	Doctor	Zijingang Campus	2.0	This course provides an in-depth analysis of marketing theories and methodologies as they relate to consumer information processing and decision making. We will review an assortment of topics related to consumer learning, sensory marketing, affect and emotion, goal pursuing, and social influence on decision making.

2021036	Fall	高级微观经济学 (英)	Advanced Microeconomics (English)	School of Management	Master	Zijingang Campus	2.0	<p>This course concerns about the behavior of individual economic agents and their interactions by introducing analytical foundations of microeconomic decision-making. It mainly includes four parts. The first part is the consumer theory. It studies consumers' preferences, utility and optimal choices. It shows how individual and market demands are formed. The second part is the producer theory. It investigates firms' technologies and cost curves, and studies their profit maximization and cost minimization problems. It demonstrates how firm and industry supplies are derived from optimal production choices. Part three brings the consumer theory and the producer theory together into models of prices and outputs under different market structures such as monopoly and oligopoly. Topics in game theory and business strategies will be briefly covered. Part four examines market failures by discussing issues of externality and public goods. Students will learn concepts, theories and analytical methods in microeconomics, and will be able to apply them to analyzing economic problems. Encouraging students to actively look for solutions to real problems would help them to better "know China and serve China" by strengthening the analysis of real economic problems in the curriculum and integrating their professional courses more closely with China's development practice.</p>
2021042	Fall	全球化战略与创新	Global Strategy and Innovation	School of Management	Master	Zijingang Campus	2.0	<p>With the increasing importance of the Chinese market and the development of Chinese companies, more and more foreign companies invest and conduct R&amp;D in China, while more and more Chinese companies go broad and set up their R&amp;D centers outside of China. It is important to understand and master the global innovation strategy and global innovation management, as well as the interaction between them. This course 'global strategy and innovation' is going to demonstrate theories and practical experiences about global innovation in and out of China of multinational enterprises (MNEs) and emerging multinational enterprises (EMNEs) in order to train students a systematic understanding of strategies and management of global innovation in and out of China. Through the course, students are expected to develop their capability for managing global innovation of MNEs and EMNEs in and out of China. This course should be of particular interest to those interested in working in technology and innovation management at MNEs and EMNEs.</p> <p>Students will be assigned a project in the course next to a visit of an MNC in China. This, combined with lectures and case discussions, will help students to demonstrate theories of global innovation and open innovation, and be aware of practical global innovation and open innovation strategies of MNEs from advanced and developing countries, and understand the skills of innovation culture and human resources management in R&amp;D centers of MNEs..</p>
2021043	Fall	电子商务与中国经验	E-Business and China Experience	School of Management	Master	Zijingang Campus	1.0	<p>This course aims to equip students with the necessary foundations in understanding the development of electronic business in the worldwide, especially in developing countries like China, and related skills to find interesting research topics under the context of e-business development and globalization at a postgraduate level. The course examines the problems with multi-disciplinary in nature, covering topics such as the development of electronic commerce in China, the supportive technologies for the business, various issues in the economics and management, as well as related research methods in relation to the topics referred.</p>

2021051	Fall	非结构数据分析	Unstructured Data Analysis	School of Management	Master	Zijingang Campus	2.0	<p>This course introduces students to the process of performing high-valued analytics using unstructured data to support business decisions. Unstructured data (text, tweets, posts, video, audio, ...) consist of over 80% of the data being produced every day. Unstructured data analysis includes methods of text mining, image classification, video analysis, music recommendation, etc., and its application permeates in commercial, manufacturing, financial, medical and daily life. Most companies have minimal competencies in using unstructured data analytics for new product development, customer retention, workforce optimization, and a myriad of other areas. so this course will allow students to begin to master how to make decisions based on unstructured data, through basic unstructured data analysis and typical applications, Students can master the most advanced data analysis theory methods and models, combined with the industry big data to carry out analysis, promote data analysis and management engineering development. This course will get you started in how to lead efforts at your company to monetize their data and achieve your career objectives. Refine the relevant educational elements of this course, encourage students to learn purposefully based on Chinese problems, cultivate students' sense of responsibility and mission to explore the unknown and pursue the truth, and promote students' development in raising problems, learning independently, solving problems, taking responsibility, and practical innovation.</p>
2023089	Fall	运筹学II (英)	Operations Research II	School of Management	Master&Doctor	Zijingang Campus	2.0	<p>The objective of this course is designed to give students the insight and the analytical skills of operations research; develop the capability to do independent studies; enables the PhD to a) apply knowledge of math and engineering, b) identify, formulate, and solve engineering problems, and c) use techniques, skills, and modern engineering tools necessary for engineering practice. The course includes 4 academic units, including queueing theory, simulation models, optimization under uncertainty and Markov Decision Process.</p>
2023109	Fall	项目实践课程	Project-based Learning	School of Management	Master	Zijingang Campus	2.0	<p>In the project-based learning course, we provide students with consulting tools and methodologies through classroom sections. Such classroom learning concentrates on improving students' capability on critical thinking and fact-based problem solving.</p> <p>We provide students with business consulting projects, which are variable but sustained. All the projects are initiated by host companies, while a group of students concentrate on a single project. Students work together with host companies in defining the scope and the deliverables, and framing the work plan. Within three months they are expected to complete the project and solve the problems identified. Throughout the project, the students are also expected to provide positive impacts on tackling the specific problem.</p> <p>The projects may involve marketing, production and operations management, human resource management, internationalization strategies, financial investment, and so on. Working on these projects, students learn for themselves, with and from other team members, facilitators, and host companies.</p> <p>Group discussion is important to learning reflection. Through group discussion and Instructor coaching, students could link the knowledge to practice, re-interpret the past experience, and enhance the capabilities of solving complex complicated business problems.</p>

2023111	Fall	社交媒体营销	Social Media Marketing	School of Management	Master	Zijingang Campus	2.0	<p>The exciting arrivals of online and mobile advertising, as well as social networking websites, have changed how we interact with each other and how the landscape of communication is shaped. The proliferation of digital platforms brings both opportunities and challenges to firms. On the one hand, social media platforms allow firms to interact with consumers in a more targeted manner, enabling them to collect richer data than traditional channels for more precise marketing. In recent years, with the deepening application of artificial intelligence, these data can also be analyzed more efficiently through algorithmic and AI-based tools, providing firms with even deeper consumer insights. On the other hand, mistakes on social media platforms may spread rapidly—sometimes amplified by platform algorithms—and could easily hurt a firm's image. Through this highly interactive course, we will guide students through a structured examination of the key traits of social media platforms, firms' strategic management, consumer psychology, and advanced social network analysis. Students will also be introduced to the latest applications of artificial intelligence in marketing, including algorithmic recommendations, sentiment analysis, AI-generated content (AIGC), intelligent customer service, and marketing automation. These tools will be integrated naturally into the study of how firms can enhance branding and deliver a seamless and consistent presence across multiple platforms. As new digital platforms will not simply replace traditional ones (e.g., face-to-face communication, print media, TV), students will learn how to coordinate strategies across media forms. The social responsibility associa</p>
2023112	Fall	数据分析编程 (英)	Programming for Data Analysis	School of Management	Master	Zijingang Campus	2.0	<p>As a free and powerful open source language, R is developed for data exploration, statistical computing and graphics application. In this era for data science, R has become an efficient, elegant and widely adopted tool for statistics, econometric analysis and data mining both inside corporations and academia. Giant companies such as Google, Pfizer, Merck, Bank of America and Shell are using it to cope with their massive data. After learning this course, the students will acquire the knowledge of how to effectively use the power of R to tackle with data analysis problems with datasets from the real world and have a better understanding of the principle of statistical computing and econometric analysis. In this course, we will systematically introduce the basic knowledge of R, data import, data arrangement and manipulation, statistical simulation, function writing, statistical description a linear regression, as well as the data visualization with the powerful function of R for graphics.</p>

2041504	Fall	管理经济学	Managerial Economics	School of Management	Master	Zijingang Campus	2.0	<p>Management economics is a fundamental course for MBA students, which discusses the principles of microeconomics and its applications of management practice. The core contents include: the assumptions of economics, supply and demand of the market, institutional design, production and cost analysis, industrial organization structure, market competition strategy, information asymmetry, game theory and decision behavior, digital economy and new economy, etc. This course not only focuses on the basic principles of economics, but also on the economic logic behind enterprise operations and management. This course not only focuses on cultivating students' economic thinking, but also on how to apply the principles of economics in frontier practice. The contents of this course have clear characteristic of current age and pay attention to refine the educational elements related to the course. Students in this course are encouraged to practice and study based on the economy of China. This course trains students' responsibility and mission to explore the unknown and the pursuit of truth. Moreover, this course will promote students' independent learning, healthy growth, responsibility, and innovation.</p>
2041512	Fall	人力资源管理	Human Resource Management	School of Management	Master	Zijingang Campus	2.0	<p>Human resources management is a course about human resource management philosophy, theories, practices and strategy in organizations. Through the job analysis, human resource recruiting, human resource incentives, human resource training and development, performance management and other specific areas, to indicate the people-oriented sustainable human resource management idea, evidence-based human resource management process, strategic human resource management practices; to clarify job analysis, selection techniques, incentives tactics, training methods, performance assessment methods and other key tactics, as well as the theoretical basis; then to understand and build a sustainable human resource management system that can match the organizational development strategy.</p>

2041519	Fall	财务会计	Financial Accounting	School of Management	Master	Zijingang Campus	2.0	Accounting is an application discipline that studies how to give objective and reasonable description of economic activities of various organizations in a special manner and in terms of money, and form information systems to assist effective economic decision-making. In this course, we will examine the essence and objectives of accounting, and key characteristics of accounting information. We will focus on accounting principles, accounting cycle, the economic significance of accounting elements, the details of financial statements and reports, and a set of accounting rules and regulations. Further, in this course we will analyze the intrinsic relationship of accounting elements and the quality of accounting information, which allows us to learn how to assess the financial position, operating results and cash flow of an accounting entity, how to use accounting information to estimate the value of a company.
2041522	Fall	公司财务	Corporate Finance	School of Management	Master	Zijingang Campus	2.0	Corporate finance is a core course for MBA postgraduates. Financial management is a subject related to the raising, distribution, use and control of enterprise funds, and its core is financial decision-making. The teaching purpose of this course is to enable students to master the basic concepts, theories and methods of financial management, learn the basic principles and methods of enterprise financial decision-making, and enable students to apply what they have learned. This course focuses on enterprise financing and investment, bonds and stocks, options and other related knowledge, as well as dividend policy, corporate governance and other financial issues. Take mastering the professional knowledge related to financial management as the teaching carrier, get out of the misunderstanding of valuing intelligence over morality in the teaching of financial management, strengthen the ideological and political education of college students, build a scientific ideological and political law and logic of the course of financial management, improve the professional ethics level of College students, and cultivate a group of financial management professionals with both morality and ability that meet the requirements of the new era.

2043573	Fall	制造信息系统	Manufacturing Information Systems	School of Management	Master	Zijingang Campus	3.0	Information technology (IT) is transforming organizations and markets, affecting general and functional management, and spawning new businesses and industries. This course introduces the key concepts, frameworks, technologies, and applications of information systems (IS). It focuses on the strategic value of IS to enterprises, the enabling role of IS in organizational changes and management innovation, the design and implementation methods of IS, and techniques related to data management and data analytics. After this course, students should understand the fundamental theories and methods of IS, be able to describe issues related to the deployment and use of IS, know tools related to data management and data analytics, and analyze IT-based solutions for business problems or IT-based startup companies.
2043709	Fall	数字时代品牌管理	Brand Management in Digital Age	School of Management	Master	Zijingang Campus	1.0	Building and managing a successful brand is both an art and a science. In the digital age, brands represent invaluable intangible assets and their creation and nurturing bring considerable challenges for brand managers. This module provides you with a comprehensive and up-to-date perspective on brands, brand equity and strategic brand management and approaches to managing a brand in the digital era and over different geographical areas. The module combines current thinking and developments surrounding global brand management in the digital era with real world cases and illustrative examples for you to draw from. Through case studies and teamwork, this module allows students to assume the role of a brand manager and address the challenges of developing and manage strong brands and communicating brand value in a global environment in the digital era.
2043712	Fall	数字化战略协同管理	Digitalization and Synergistic Management Of Strategy	School of Management	Master	Zijingang Campus	2.0	《The Digitalization and Synergistic Management of Strategy》employs the systematic methodology, exploratively constructs a Self-Adaptive Optimization Management System, which is based on the theories of Synergetics, System Engineering, Management Science including Strategic Management, Operations and Sales/Marketing Management. Leadership and Organizational Behavior etc

2142015	Fall	密码学中的可证明安全理论	Provable Security in Cryptography	College of Computer Science and Technology	Master	Yuquan campus	1.0	The course is designed to introduce the provable security theory in modern cryptography, including the definition and applications in cryptosystem design. This course covers the three main components of provable security, which are mathematical problems; security definition and reduction algorithm and computational models. For mathematical problems, the content includes but not limits to factoring, discrete logarithm and short vector problems in lattice; for security definition and reduction, the content includes but not limits to the formal definition of the security of the cryptosystem and the reduction, by illustrating how to convert the security of cryptosystem to the hardness of mathematical problems; for computational models, the content includes but not limits to the definition of the models in cryptography and variants of models along with the applications. Since the course serves as a foundation of cryptography and has strong theoretical background, every student will be requested to finish up to 5 homeworks and pass the middle-term exam and the final exams, additionally, each student needs to hand in a reading report about the hot research topic of cryptography.
2221511	Fall	国际关系理论	International Relations Theory	School of Public Affairs	Master	Zijingang Campus	2.0	This course is to give students a systematic introduction to International Relations theory at a master's degree level. It will try to establish a sophisticated appreciation of how IR theory developed from roots in classical political philosophy, how that development related to historical events, and how some of the different elements of IR theory complement and contradict each other. In all cases we will try to apply the theories and approaches we tackle in this course to real world examples of historical and contemporary international relations, so as to help students to see why theory matters and how it can (and does) guide policy in the real world.
2223325	Fall	全球政治经济学	Global Political Economy	School of Public Affairs	Master	Zijingang Campus	2.0	The course contains three main parts. First, introduce the main theoretical schools of global political economy, including liberalism, mercantilism, structuralism and constructivism. The second is a thematic discussion of the world's major political and economic structures, including trade and investment structure, monetary and financial structure, security structure and knowledge and technology structure. The third is to analyze the main global political and economic problems, such as regional integration, developing-oriented countries, negative globalization, energy problems and environmental problems, using the main theories and structural analysis methods of global political economy.

2343057	Fall	国际新闻写作与报道	International News Writing and Reporting	College of Media and International Culture	Master	Zijingang Campus	2.0	The course is designed to introduce students to news writing and reporting and the skills vital to success in journalism and mass communication. The course's overriding objective is to help students develop a clear, concise, and interesting writing style and a commitment to thorough and accurate reporting and writing news.
2402001	Fall	研究生论文写作指导	Scientific writing for graduate students	School of Aeronautics and Astronautics	Master&Doctor	Yuquan campus	1.0	The Scientific Writing for Graduate Students is a compulsory course for graduate students in the School of Aeronautics and Astronautics. This course covers several topics. It provides the basic steps and strategies for preparing scientific papers, dissertations and academic presentations. It also introduces the methods and tools for the literature review and the scientific citations. This course aims to improve the writing skills of students, as well as enhancing the knowledge of academic ethics. Several main goals include: 1) understanding the format and structure of academic papers, 2) learning the usage of common words, phrases, and sentences for scientific writing, 3) getting familiar with the basic methods of literature review, 4) understanding the requirements of academic ethics, 5) learning the basic steps of publications, 6) understanding the basic requirements and precautions for preparing the slides for academic presentations.
2521006	Fall	工程设计中的模拟与分析	Modeling and analysis in Engineering Design	School of Mechanical Engineering	Master	Zijingang Campus	2.0	The course is prepared for graduate students in engineering departments to master the basic theory and techniques in mathematical modeling and numerical analysis. The major part of the contents is the following three parts. The first part is the discussion about basic numerical modeling and analysis methods, such as iterative methods for linear and nonlinear systems, interpolation, approximation of function and given data, etc. The second part is mainly about ordinary differential equation models. The origin of the ordinary differential equations, its numerical analysis, its applications in vibration analysis and applications, and its application in control engineering, etc. The third parts is mainly about partial differential equation models for fluid flow, heat transfer and conduction, diffusion, deformation.etc. In this course, there are open discussion about the modeling and numerical methods for different problems occur in research and development. Meanwhile, the attendance of the course could combine themselves into many study teams, and each study team will work cooperatively on some given engineering problems, and draw conclusion about their solution to the problem and formulate their solution into formal project reports.

2523079	Fall	移动机器人控制	Mobile Robot Control	School of Mechanical Engineering	Master	Zijingang Campus	2.0	The course introduces the basic concepts and design methods for mobile robot control. The main topics include Kinematics, Localization, Mapping, Guidance, Tracking Control.
3013110	Fall	结构光与量子光学	Structured light and quantum optics	College of Optical Science and Engineering	Master	Yuquan campus	2.0	The basic part of this course mainly teaches structured light and its applications, comprehensively describing the electromagnetic theory, optical properties, methods, and applications related to this technology. Detailed discussion on the unique beam characteristics of structured light, such as optical vortices and other wavefront structures, related phase characteristics, and photon aspects. This course will also cover the latest cutting-edge developments in structured light and quantum, including structured light, optical vortices and orbital angular momentum, digital holography, classical entanglement, high-dimensional quantum entanglement, quantum communication, quantum computing, novel lasers, and laser resonators.
3121306	Fall	光电子学物理基础	Introduction of Optoelectronic Physics	College of Information Science and Electronic Engineering	Master&Doctor	Yuquan campus	2.0	The Physical Fundamentals of Optoelectronics is an important professional foundation course required for the major of electronic science and technology in our university, and is an indispensable and important tool for the research of present optoelectronic science and technology. Its teaching task is to equip students with the basic knowledge, basic theory and basic skills of optoelectronics physics required by the major, and to lay the foundation for learning subsequent courses and cultivating students' innovative ability. The main contents are: optical constants and dispersion relations; basic theory of optical absorption in semiconductor materials; absorption and emission spectra of interband transition; exciton spectra and defect spectra; intraband absorption spectra of semiconductor materials; lattice vibrations and infrared, Raman absorption spectra; first nature principle calculations, etc.

3821092	Fall	固体地球物理学	Solid Earth Geophysics	School of Earth Sciences	Master	Zijingang Campus	2.0	Understanding the physical processes that govern Earth's interior and surface dynamics is essential for unraveling the mechanisms of plate tectonics, crustal deformation, and planetary evolution. This course introduces students to the foundational principles of geophysics and geodesy, providing a quantitative framework for studying Earth's structure and dynamics. Topics include seismic imaging of Earth's interior, the role of gravity and magnetism in exploring subsurface features, and the application of geodetic techniques such as GNSS and InSAR to measure surface deformation and plate motions. By combining theoretical principles with real-world case studies, the course equips students with the tools and knowledge to analyze Earth's processes, offering a foundation for advanced research and professional applications in Earth sciences.
3823112	Fall	矿物学研究进展	Advances in Mineralogy	School of Earth Sciences	Master	Zijingang Campus	2.0	The course will present the fundamental components of defects in minerals, specifically point defects, linear defects, and planar defects (part 1). Their impact on the properties of minerals will be explored by presenting the theories of atomic diffusion and the theory of dislocations. Their role in the control of the chemistry, isotopic chemistry and the plastic deformation of minerals and rocks (part 2). In Part 3, we will explore several advanced methods used in mineralogy: Mössbauer spectroscopy, infrared spectroscopy, ion probe analysis and ab-initio numerical modelling. These three parts will be largely illustrated by examples taken from the solid earth frontier research literature, which will be discussed with the participation of the students. As a final touch of this course for future researchers, we will address the question of the academic publishing: how the academic publishing is working, the role of every actor in the system, and how as future authors, they could use it to target at best the journal to publish their results.
4413030	Fall	胡塞尔的现象学心理学	Husserl's Phenomenological Psychology	School of Philosophy	Doctor	Zijingang Campus	2.0	This course focuses on the relationship between Husserlian phenomenology and psychology, as Husserl described it in his work "Phenomenological Psychology." Husserl saw both these disciplines as closely related because they both have subjectivity as their object of study. Husserl distinguishes two kinds of psychology: empirical and eidetic or phenomenological psychology. Yet Husserl saw both these psychologies as very different from transcendental phenomenology, believing only the latter to be the actual first philosophy and epistemology. This course will follow Husserl's characterizations and differentiations in detail and assess their plausibility. On the one hand, this course will guide students to independently think of traditional academic views, to develop critical thinking, and cultivate students' academic research ability; On the other hand, through the introduction of phenomenological psychology, this course will cultivate students' interdisciplinary research ideas to adapt to the development of research paradigm of humanities in the new era.

4413034	Fall	未来哲学导论	Introduction to Future Art	School of Philosophy	Doctor	Zijingang Campus	2.0	<p>The theme of this course is "Future Philosophy", which is divided into four parts: the first part discusses the future-oriented philosophies of the three great philosophers of Marx, Nietzsche and Heidegger; the second part discusses modern technology and the dominance of technology ;The third part deals with the theme of reconstruction of human experience in the technological life world; the fourth part mainly discusses the future human beings and their possible life forms, and proposes a conception of a new philosophy of life. This course strives to break through the linear thinking barrier between technological optimism and technological pessimism, and develop a "dual nature" or "dualization" of philosophy of technology and philosophy of life, and believes that contemporary philosophy and humanities must turn their attention to "future" Pointing at the reconstruction of the new life world experience as one's own task.This course refines relevant nurturing elements, advocates students to think for the future, pay attention to the present, and build an autonomous Chinese philosophical system, thought system and discourse system. Cultivate students' sense of truth-seeking, responsibility and mission to explore the unknown and pursue the truth, and promote students' development in independent learning, healthy growth, responsibility, and practical innovation.</p>
4421029	Fall	情感哲学	Philosophy of Emotion	School of Philosophy	Master	Zijingang Campus	2.0	<p>This course provides an introduction to the central topics in the philosophy of emotion, and proceeds to explore some of these topics in depth, based on reading and discussing classical and contemporary texts. We will begin by considering core aspects of emotions, with a focus on their peculiar phenomenology and intentionality, and proceed to a consideration of the variety of different emotions, as well as the relations between emotions and values. We will also give considerable attention to the different theories of emotions, such as the feeling theories, judgmental theories, perceptual theories, and attitudinal theories. Finally, we will consider various aspects of the epistemological role and importance of emotions.</p>
4623160	Fall	语用学	Pragmatics	School of International Studies	Master	Zijingang Campus	2.0	<p>Pragmatics, which has its origin in the philosophy of language, is mainly concerned with meanings by virtue of, or dependent on, language use, i.e., the kind of meanings beyond what is literally said by a speaker. This course focuses primarily on such topics as context, deixis, presupposition, speech acts, theories building on verbal communication (implicature, face, politeness, relevance, etc.) and the latest developments in the field of pragmatic studies. Through the study of this course, students will better understand how language works in different communicative contexts, and will know how to conduct an adequate analysis of various issues concerning language use.</p>

4623176	Fall	日语语言学专题研究	Japanese linguistics Seminar	School of International Studies	Master	Zijingang Campus	2.0	The Japanese Linguistic Seminar is designed to introduce more advanced knowledge on Japanese linguistics, including the branches of linguistics and their corresponding research methods. Students are expected to be able to read previous work critically.
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