

清华大学

2010-2011 学年度

春季学期全英文授课课程内容简介

Introduction to the Undergraduate Courses

Taught in English in the Spring Semester of

2010-2011

Catalogue

School of Architecture

Indoor Air and Health:Past,present and future

School of Mechanical Engineering

Engineering Materials

School of Sciences

Physics I

Chemical Biology

School of Life Sciences

Biochemistry(1)(in English)

Genetics

School of Economics and Management

Stochastic Process

Econometrics

Management Information Systems

Money and Banking

Intermediate Macroeconomics

Expert Systems and Decision Support Systems

Developmental Economics

Economic Growth(in English)

Business Communication

Foundations for Financial Economics

Computer Systems Architecture

Corporate Finance

Production and Operation Management

Intermediate Financial Accounting(1)

Managerial Accounting (1)

Organizational Design and Human Resource Management Economics

Foundation of Actuarial Science

Business Case Analysis

Finance Seminar

International Business

School of Humanities and Social Sciences

Statistics for Psychology

School of Journalism and Communication

English for Journalism and Communication(2)-Listening and Speaking

English for Journalism and Communication IV -U.K Media Culture

English for Journalism and Communication(6)-Introduction to Media

English for Journalism and Communication(7)-Comprehensive Communications Skills and
Practic

Department of Electrical Engineering

Renewable Energy and Future Power Technology

Department of Industrial Engineering

Traffic Systems Planning and Control

Department of Civil Engineering

Structural Mechanics(1)(in English)

Department of Hydraulic And Hydropower Engineering

Foundation Analysis and Evaluation(in English)

Department of Automation

Enterprise and Information System Modeling and analysis

Department of Electronic Engineering

Signals and Systems(in English)

The Undergraduate Courses Taught in English in the School of Architecture

【Course Number】 40990181

【Course Title】 室内空气品质和健康概论 Indoor Air and Health:Past,present and future

【Credits】 1 【Semester】 Spring

【Instructor】 H.C. Bekkering

【Brief Introduction】

The history, presence and future of indoor air quality and health are introduced. This course can provide students a general knowledge on indoor air quality and health. In addition, students' abilities of written and oral English can be improved.

The Undergraduate Courses Taught in English in the School of Mechanical Engineering

【Course Number】 20120103

【Course Title】 工程材料 Engineering Materials

【Credits】 3 【Semester】 Spring

【Instructor】 WU Yunxin

The Undergraduate Courses Taught in English in the School of Sciences

【Course Number】 10430344

【Course Title】 大学物理 (1) Physics I

【Credits】 4 【Semester】 Spring

【Instructor】 Bi Kaijie

【Brief Introduction】

To survey the spectrum of topics in physics at a fairly introductory level. The two semesters are seen as strongly linked. Emphasis is placed on common techniques used in different areas and inter-relationships between material in different chapters and fields.

Great importance is placed on the ACTIVE involvement of the students in the running of the course. This includes: (1) many questions asked directly to the students during lectures, as well as a lot of attention given to questions from the students; and (2) weekly meetings, guided by graduate students, of smaller sets of the students during which students are strongly encouraged to actively participate in discussing in some depth topics and exercises being covered.

Demonstrations are frequently used, with a strong emphasis on those with which the students are unfamiliar or that may excite their curiosities. If an actual demonstration is not possible, videos or pictures are used to simulate them.

Assessment: mid-term exam (35%) + final exam (45%) + discussion & assignment (20%)

【Course Number】 40440283

【Course Title】 化学生物学 Chemical Biology

【Credits】 3 【Semester】 Spring

【Instructor】 Liu Lei

【Brief Introduction】

The Undergraduate Courses Taught in English in the School of Life Sciences

【Course Number】 30450203

【Course Title】 生物化学(1)(英文) Biochemistry(1)(in English)

【Credits】 3 【Semester】 Spring

【Instructor】 Liu Dong

【Brief Introduction】

The main purpose of this course is to teach the students the basic concepts in biochemistry, which includes the structures and functions of proteins, nucleic acids, carbohydrates, lipids and biomembranes. We will also put the emphasis on enzyme kinetics and molecular mechanisms of signal transduction of the cells. Besides lectures, we will also discuss the problems and answer the questions to the students through the websites or one-to-one meeting. There are will be some homework assignments to students after each lecture. We will also recommend some original research articles for students to read to further raise their interests in biochemistry.

【Assessment】 Exam

【Course Number】 30450303

【Course Title】 遗传学, Genetics

【Credits】 3 【Semester】 Spring

【Instructor】 ZHOU Bing

【Brief Introduction】

This course is designed to introduce genetic principles to students of biology major. It aims to cover comprehensively all fields of classical and modern genetics, but skips most topics that have been taught in biochemistry and microbiology.

Assessment: final exam (55-60%) + mid-term exam (30-35%) + tests (the rest). All are in written forms.

The Undergraduate Courses Taught in English in the School of Economics and Management

【Course Number】 20510052

【Course Title】 随机过程 Stochastic Process

【Credits】 2 **【Semester】** Spring

【Instructor】 ZHANG Lihong

【Brief Introduction】

Stochastic process is the mathematical subject which studies the statistical properties of the random phenomenon changing with time and/or other parameters, is also the theoretical foundation of stochastic model construction. Stochastic process has been widely applied to all areas in science and technology, and is one of the most important mathematical tools in economics and finance. The purpose of this course is supplying the mathematical foundation for undergraduate student to study the economic and financial issues.

Assessment: tests (10%~20%) + final exam (80%~90%) in the form of close book

【Course Number】 30510053

【Course Title】 计量经济学 Econometrics

【Credits】 3 **【Semester】** Spring

【Instructor】 XU Yuan

【Assessment】 Exam

【Course Number】 30510202

【Course Title】 管理信息系统 Management Information Systems

【Credits】 2 **【Semester】** Spring

【Instructor】 CHEN Guoqing

【Brief Introduction】

In the context of rapid advances in information technology (IT) and Internet applications, the course covers a series of related materials as follows: (1) Jobs and respective abilities in information systems and management; (2) Gaining competitive advantage with IT (e.g., supply chain management and ERP, customer relationship management, business intelligence); (3) Organizing and use of information (e.g., conceptual descriptions, ties within information, data integrity); (4) Discovering knowledge for decisions (e.g., knowledge types, data mining tools, association rules); (5) Information analysis for management decisions (e.g., optimal decisions, alternatives, scenarios); (6) Information systems development cycle and business descriptions; (7) IT management (e.g., roles of CIO, outsourcing, business continuity); (8) Emerging fields (e.g., information goods, e-commerce).

The content of the course also includes case discussions (e.g., Digital China, CSC and General Dynamics), lab studies (e.g., SAP ERP, BO, EMC), business practices (e.g., invited speakers), etc.

Assessment: assignment (45%) + final exam (45%) + participation (10%)

【Course Number】 30510523

【Course Title】 货币银行学 Money and Banking

【Credits】 3 **【Semester】** Spring

【Instructor】 Liu Qing

【Assessment】 Exam

【Course Number】 30510763

【Course Title】 中级宏观经济学 Intermediate Macroeconomics

【Credits】 3 **【Semester】** Spring

【Instructor】 Bai Chongen

【Brief Introduction】

We will study the economic issues within a unified framework as possible as we can. At the same time, we will also try to introduce alternative theories and models. The main purpose is to introduce the method to study macroeconomics, not the facts and the theories. We emphasize the micro-foundation, and use the neoclassical economics as the benchmark. Nevertheless, we also introduce the Keynesian economics by introducing some market imperfections such as sticky wage and search in labor market.

We will start with the basic facts and issues in macroeconomics. Then we will introduce the modern approach to address these issues. We will study how different markets work together in general equilibrium. Markets for labor, saving and investment, and financial assets interact to determine the economy's long-run growth and its fluctuations.

Assessment: assignment (10%) + mid-term exam (40%) + final exam (50%)

【Course Number】 30510782

【Course Title】 专家系统与决策支持系统 Expert Systems and Decision Support Systems

【Credits】 2 **【Semester】** Spring

【Instructor】 HUANG Jinghua

【Brief Introduction】

This course is an introduction to expert systems and decision support systems, which is an integral part of the computer science curriculum. In this course, we learn how theory and applications complement each other. Both theory and application are presented. Students are provided with the Prolog, Lisp, CLIPS language that they can use to develop systems. By integrating theory with a fully functional means of applying that theory to real-world situations, students will gain an appreciation for the role played by expert systems and decision support systems in today's world.

The content of the course includes four parts with 12 chapters: 1) Overview of AI, ES and DSS; 2) Knowledge expression and inference; 3) Reasoning under uncertainty; 4) Design and development of ES with Clips language.

Assessment: attendance (5%) + 5 minutes presentation (5%) + individual assignment (20%) + final exam (close-book, 70%)

【Course Number】 30510863

【Course Title】 发展经济学 Developmental Economics

【Credits】 3 **【Semester】** Spring

【Instructor】 LI Hongbing

【Brief Introduction】

1. Introduction: What is development; Development indicators; State of the world in terms of development.
2. Growth theories: introduce several classical growth theories.

3. Poverty and inequality: introduce the concepts and measurements; discuss the relationship between poverty/inequality and economic development.
4. Population and development: micro theories of fertility models; macro population models; empirical evidence.
5. Education: the level of education; return to education.
6. Migration and employment: migration is a very important phenomenon during economic development; associated with it is urban unemployment; we will describe these issues as well as related policies.
7. Agriculture and rural development.
8. Sustainable development and the environment: introduce the theory of public good and externality, and apply these theories in environmental issues.
9. Finance and insurance in developing countries: explain why markets for finance and insurance may fail and discuss mechanism that could help to fix these problems.
10. International perspectives: how trade and international finance affect development.
11. Political economy of development: explain how politics affects development and growth.
12. Economic transition: a special development process to a group of countries.

Assessment: final exam (50%) + assignment (10%) + presentation (15%) + thesis (25%)

【Course Number】 30510883

【Course Title】 经济增长（英） Economic Growth(in English)

【Credits】 3 **【Semester】** Spring

【Instructor】 Lu Lin

【Brief Introduction】

【Assessment】 Exam

【Course Number】 30510912

【Course Title】 商务沟通 Business Communication

【Credits】 2 **【Semester】** Spring

【Instructor】 Nancy Han

【Brief Introduction】

Business Communication (taught in English) is a course training students to be able to deliver a presentation and submit a written proposal efficiently as well as effectively in a business context. The training is very important for students who aim to succeed in the business world. Followings are the course outline that helps students interested in this course to have a specific idea about the course requirement so to complete this course successfully. The course is delivered in English with many training activities which eventually get students to be an efficient business presenter in English. It helps the learner aware of the communication goals and therefore able to apply the principles to create an efficient and effective business presentation. It also helps the learner apply the communication principles to written formats since the written proposals are evaluated as part of the final performance. It requires the learner to be a team member to make the presentation successful, for being able to work with a team is an important element for a manager's future leadership. Finally, being able to listen to peer's presentations and providing feedback are important tasks in the course as well.

Assessment:

- Language quiz 10%
- Mid-term presentation 20%
 - delivery 10%
 - power point 5%
 - written report 5%
- Final presentation 50%
 - delivery 20%
 - power point 10%
 - written report 20%
- Class participation 20%

【Course Number】 30511033

【Course Title】 金融经济学导论 Foundations for Financial Economics

【Credits】 3 **【Semester】** Spring

【Instructor】 Liu Chun

【Brief Introduction】

This course introduces the basic theoretical framework of modern finance, including: risk and investment management theory, pricing theories and models based on on-arbitrage and equilibrium principles, derivatives, empirical finance and behavioral finance.

【Assessment】 Daily performance (30%) + final exam (70%)

【Course Number】 30511043

【Course Title】 计算机系统原理 Computer Systems Architecture

Principles of Insurance: Life, Health and Annuities

【Credits】 3 **【Semester】** Spring

【Instructor】 Guo Xunhua

【Brief Introduction】

This course provides the hardware and software technology background to enable systems development and management personnel to understand tradeoffs in computer architecture for effective use in a business environment. A systematic view of computer systems will be utilized in examining the components, structures, and characteristics of computer hardware and software as the infrastructure of modern information technology.

【Assessment】 Exam

【Course Number】 30511053

【Course Title】 公司金融 Corporate Finance

【Credits】 3 **【Semester】** Spring

【Instructor】 Chen Yunling

【Brief Introduction】

The focus of the course is learning how a corporate manager can evaluate prospective investments and

projects, and how to raise money to finance the projects. This involves four major parts. The first is discounted cash flow (DCF) valuation. This part of the course involves learning the concepts and techniques necessary to evaluate the cash flows of projects. A sample of topics covered within this part of the course includes the time value of money, compounding, annuities, perpetuities, bond prices, stock prices, net present value, and the internal rate of return. The second part of the course focuses on the relationship between risk and return. Sample topics include capital market history, market efficiency, concept of risk, diversification, the Capital Asset Pricing Model (CAPM), and the weighted average cost of capital (WACC). The third part is capital structure. More details regarding debt and equity are discussed. We use equity as example to introduce issuing securities to public. Then the famous Modigliani and Miller (MM) capital structure theory is introduced. We first discuss the M&M theory without corporate taxes. After knowing the basic ideas, corporate taxes are incorporated. The last part focused on firm valuation. Three approaches are considered: WACC, Adjusted Present Value (APV), and discounting cashflows to equity (FTE). Real world financial statement modeling is introduced as the most complicated case.

【Assessment】 Exam

【Course Number】 40510223

【Course Title】 生产与运作管理 Production and Operation Management

【Credits】 3 **【Semester】** Spring

【Instructor】 HUANG Shuo

【Brief Introduction】

From an organizational perspective, operations management may be defined as the management of the direct resources that are required to produce and deliver an organization's good and services. The day-to-day activities within the operations management function focus on adding value for the organization through its transformation process. The main contents of operations management can be divided into four parts: 1) Operations strategy and the firm's competitiveness, including the competitive priorities, the relationship between operations strategy and the firm's competitiveness, operations processes selection, etc. 2) Design of the operations system, such as new product and service development, capacity decision, facility location and layout, job design, etc. 3) Operations planning, organizing and control, including forecasting, operations planning, inventory control, MRP and JIT, supply chain management, etc. 4) The improvements of operations system, including quality control and improvements.

Assessment: attendance & class performance (10%) + individual assignment (20%) + group report (10%) + final exam (60%)

【Course Number】 40510323

【Course Title】 中级财务会计(1) Intermediate Financial Accounting(1)

【Credits】 3 **【Semester】** Spring

【Instructor】 Luo Ting

【Brief Introduction】

This course will focus on U.S. accounting standards, and the underlying issues of accounting will be

incorporated with its actual development in China and international accounting standards. We will also cover various ethical issues related to the use and production of accounting information. All the materials will be taught in the class, and small cases will be discussed to get a better understanding. This course is divided into two parts: the first part gives a brief review of the standard setting process of U.S. GAAP and describes the financial reporting environment. Financial accounting framework and accounting system are also discussed; the second part illustrates the treatment of basic accounting elements, including cash, inventories property, plant and equipment and intangible assets.

【Assessment】 Exam

【Course Number】 40510343

【Course Title】 管理会计(1) Managerial Accounting (1)

【Credits】 3 【Semester】 Spring

【Instructor】 Zhang Haiyan

【Brief Introduction】

【Assessment】 Exam

【Course Number】 40510652

【Course Title】 组织设计与人力资源经济学 Organizational Design and Human Resource Management Economics

【Credits】 2 【Semester】 Spring

【Instructor】 Qiao Xue

【Brief Introduction】

This course focuses on economic principles of internal labor market and organizational design. The topics it covers include the boundary of the firm, the allocation of ownership in the organization, wage determination, screening of job candidates, principal agent relationship, human capital investment and its impact on employment stability, job design, hierarchy, bargaining theory, etc. International comparative context is considered in the study of the theoretic topics.

Assessment: (1) Class participation and contribution, 20%, individual-based. (2) Final Assessment, 40%, individual-based. (3) A short essay, 40%, group-based.

【Course Number】 40510713

【Course Title】 精算学基础 Foundation of Actuarial Science

【Credits】 3 【Semester】 Spring

【Instructor】 Chen Bingzheng

【Brief Introduction】

This course covers individual future lifetime and its related functions, and pricing for individual life insurance and annuities. I will include some SOA past exam M problems as examples.

Assessment: Homework (25%) +1st exam(35%, May 30)+2nd exam(40%,)

【Course Number】 40511012

【Course Title】 商务案例分析 Business Case Analysis

【Credits】 2 **【Semester】** Spring
【Instructor】 Jiao Jie
【Brief Introduction】
【Assessment】

【Course Number】 40511123

【Course Title】 金融学专题研究 Finance Seminar
【Credits】 3 **【Semester】** Spring
【Instructor】 Lu Yao
【Brief Introduction】

This course is a seminar style class. Each class (except the first one) focuses on one specific topic. Each class contains three sections: lecture on brief introduction to the literature of the topic covered by the class; paper discussion; and student presentations of journal articles.

• Lecture: Each class begins with brief introduction to the body of literature on the topic covered by the class.

• Paper discussion: Each class discusses one article on the covered topic. Every student should contribute to the discussion of every paper. Students are expected to have thoroughly read the articles and be ready to answer any questions related to them. The following main areas of each paper will be discussed: its key findings, its methods and research design, its contribution to the topic, its strengths and its weaknesses. Class participation will not rely only on volunteers and cold-call will also be employed.

• Student presentations of journal articles: Each student is required to give a presentation of a recommended journal article (or working paper) over the semester. The detailed requirement can be seen in course evaluation section.

The class also includes several talks by outside speakers from industries and other academic institutions.

【Assessment】 Final exam (65%) + assignment & tests (30%) + attendance (5%)

【Course Number】 40511202

【Course Title】 国际商务 International Business
【Credits】 2 **【Semester】** Spring
【Instructor】 Duan Zhirong

The Undergraduate Courses Taught in English in the School of Humanities and Social Sciences

【Course Number】 40611253

【Course Title】 心理统计学 Statistics for Psychology

【Credits】 3 **【Semester】** Spring

【Instructor】 Emery Clifton Robert

【Brief Introduction】

This course covers statistical concepts and tools needed for applications in psychology. This course also provides some relevant tools for courses in the department.

We first cover summary and descriptive statistics. We then cover the basic concepts and applications of probability, both discrete and continuous random variables and their probability distributions.

The Undergraduate Courses Taught in English in the School of Journalism and Communications

【Course Number】 30670231

【Course Title】 专业阶梯英语(2)-口译与听说 English for Journalism and Communication(2)-Listening and Speaking

【Credits】 1 **【Semester】** Spring

【Instructor】 Dong Guanpeng

【Brief Introduction】

This course is providing students the unique venue to study interpretation skills while improving listening comprehension abilities in the field of journalism and media studies. Course textbook is produced by faculty according to experiences and student feedbacks during the previous years of teaching. Vocabulary for current affairs and crucial domestic and international issues are dedicatedly collected for teaching and learning. The course aims to maintain its minimum requirement no lower than foreign language studies departments. Both of Chinese and international faculty members will jointly deliver the lectures as well as supervising seminars.

【Course Number】 30670301

【Course Title】 专业阶梯英语（4）—英国媒体文化 English for Journalism and Communication IV -U.K Media Culture

【Credits】 1 **【Semester】** Spring

【Instructor】 Hang Min

【Brief Introduction】

English Media Culture is a course targeting to third-year students of journalism major. It has 1 credit and 16 classroom-hours. The objective of the course is to introduce the British media, their characteristics, how they

influence the British society and how they form the unique British media culture.

Assessment: exam (30%) + attendance (20%) + assignment (50%)

【Course Number】 30670421

【Course Title】 专业阶梯英语(6)-媒介入门 English for Journalism and Communication(6)-Introduction to Media

【Credits】 1 **【Semester】** Spring

【Instructor】 Lu Jia

【Brief Introduction】

By dint of analyzing topics of media studies and mass communication studies, this undergraduate course aims to provide journalism/communication majors with the theoretical framework and methodology of media/communication studies. Students are expected to attain a general overview of media studies and the historical evolution of mass communication studies in the US and the UK. Equipped with a critical perspective and media literacy, students will be able to develop potentiality in and familiarize themselves with the resources in academic research.

【Course Number】 30670431

【Course Title】 专业阶梯英语(7)-新闻传播英语技能训练 English for Journalism and Communication(7)-Comprehensive Communications Skills and Practice

【Credits】 1 **【Semester】** Spring

【Instructor】 Bill Valentino

【Brief Introduction】

The course aims at teaching the students the basics of public relations and advertising, including the basic terms and theories, meanwhile, the course aims at improving students English proficiency, both in written and spoken. The classes is proceeded mainly by the instructor' s lectures. The instructor will make full use of his own long experience in public relations field to introduce the basic elements of PR theories, PR planning and process, as well as PR ethics. Case studies will be frequently used in the lectures. And students' participation is encouraged so that students can get a clearer sense of the public relations. The writing of press release will also be taught in the class, so as to make students more involved in public relations and improve their written English.

The Undergraduate Courses Taught in English in the Department of Electrical Engineering

【Course Number】 40220831

【Course Title】 可再生能源与未来电力技术(英) Renewable Energy and Future Power Technology

【Credits】 1 **【Semester】** Spring

【Instructor】 Li Chade

【Brief Introduction】

Clean energy is a pressing and important issue in the world today to reduce our dependence on fossil fuels, maintain the environment and cater for future demand. This lecture course will cover the policy and technology of the generation of clean power (wind, solar, wave), as well as more efficient and emerging technologies to distribute and use this power. The course covers all the elements of clean technology. The course begins with an introduction to clean technology on the macro scale, looking at economics and policy. The next part of the course describes the technology needed to generate power from renewable sources, such as wind and solar. The course then describes new technologies for the distribution, transmission and usage of power which allow more control, are more efficient and are cleaner than existing technologies.

The Undergraduate Courses Taught in English in the Department of Industrial Engineering

【Course Number】 40160343

【Course Title】 交通系统规划与控制 Traffic Systems Planning and Control

【Credits】 3 **【Semester】** Spring

【Instructor】 Jiang Hai

【Brief Introduction】

Transportation is a complex, large-scale, integrated, open system. This course aims at introducing the basic traffic models and theories (traffic flow theory and traffic control theory), which will provide students the concept of transportation. Other fundamental issues like freight management and public transportation planning will be covered. It also introduces multiple transportation modes that are closely related to logistics or supply chain management. In the designed team project, students are expected to learn how to use microscopic traffic simulation tool to simulation real-world traffic, which may be further extended to incorporate traffic control algorithms.

The Undergraduate Courses Taught in English in the Department of Civil Engineering

【Course Number】 20030134

【Course Title】 结构力学(1)(英) Structural Mechanics(1)(in English)

【Credits】 4 **【Semester】** Spring

【Instructor】 Li Quanwang

【Brief Introduction】

This course is intended to provide the student majoring in civil engineering skills of structural analysis at an elementary level. It mainly consists of structural geometric construction rules, computational methods for internal forces and deformation. The three major relations: equilibrium, deformation compatibility and stress-deformation conditions are used to study the behavior of structural components under various external loads. Emphasis is placed on the two major methods: the consistent displacement (force) method and the displacement method. The course serves as the basis for further exposure of structural theories to the student majoring in civil engineering.

The Undergraduate Courses Taught in English in the Department of Hydraulic And Hydropower Engineering

【Course Number】 30040362

【Course Title】 基础工程（英） Foundation Analysis and Evaluation(in English)

【Credits】 2 **【Semester】** Spring

【Instructor】 Cheng Xiaohui

【Brief Introduction】

This course provides current state-of-art and state-of-practice methods in Foundation Engineering. This is accomplished by including a mix of practice, “how to”, latest suggested analysis/design methodology and current format of education domestically and internationally. Theoretical concepts and analytical methods are introduced for guidance but the application of a large amount of judgment which is based on “global” experience is also incorporated. The former is emphasized in this class with a series of computer-aided examples and homework, and the later is demonstrated with respect to the significantly geotechnical uncertainties on which “global” experience are grown out. Two types of foundation analysis are coped with as follows: (1) Slopes and Retaining Structures and (2) Shallow and Deep Foundations.

The Undergraduate Courses Taught in English in the Department of Automation

【Course Number】 40250942

【Course Title】 企业与信息系统建模分析 Enterprise and Information System Modeling and analysis

【Credits】 2 **【Semester】** Spring

【Instructor】 Li Qing

【Brief Introduction】

Enterprise engineering and information system modeling and analysis techniques are introduced in this course. These techniques are basic methods of system design/realization, industrial engineering, management and IT consulting for graduated students from industrial engineering, management engineering, and information engineering department.

**The Undergraduate Courses Taught in English in the Department of
Electronic Engineering**

【Course Number】 30230654

【Course Title】 信号与系统（英） Signals and Systems(in English)

【Credits】 4 **【Semester】** Spring

【Instructor】 Song Jian

【Brief Introduction】

This course covers the signal representation/analysis, especially how to represent the complex signals in simple format either in time or frequency domain. Based on that, it also covers how signals behave after passing through various linear, time-invariant systems. This course consists of following individual yet highly related sessions such as Introduction, time-domain analysis on the linear, time-invariant systems, signal representation in frequency domain (Fourier analysis/Fourier transform), Laplace Transform, Discrete time-domain signals, Z-Transform, Discrete/Fast Fourier transform, the state space analysis of the linear systems, and etc.