



“一带一路”标准化教育与研究大学联盟
B&R University Alliance for Standardization Education and Academics

Experience of CJLU on Teaching Standards to Non-technical Students

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Current status of standardized education

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Standardized educational practices



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01 Standardization education in China



Today, standards are closely linked to new terms such as eco-design, accessibility, social responsibility and systems. Standardization has been fully involved in all areas of economic and social development, and standards have risen to the height of national strategies in many countries.

Although the history of standardization is long, it is not too long to develop as a discipline, and the popularization of standardized education in Institutions of higher learning is not widely.

01 Standardization education in China

China attaches great importance to standardization education.

In terms of **higher education**, a multilevel standardization professional education system has been established from master's degree to bachelor's degree.

In terms of **talent training**, a multi-agent standardized vocational education and training system has been developed.

In terms of **theoretical textbooks**, it has enriched the theoretical basis and curriculum of standardized interdisciplinary research.



国际标准化培训基地(青岛)

INTERNATIONAL STANDARDIZATION
TRAINING BASE (QINGDAO)



02

Standardization education to non-technical students

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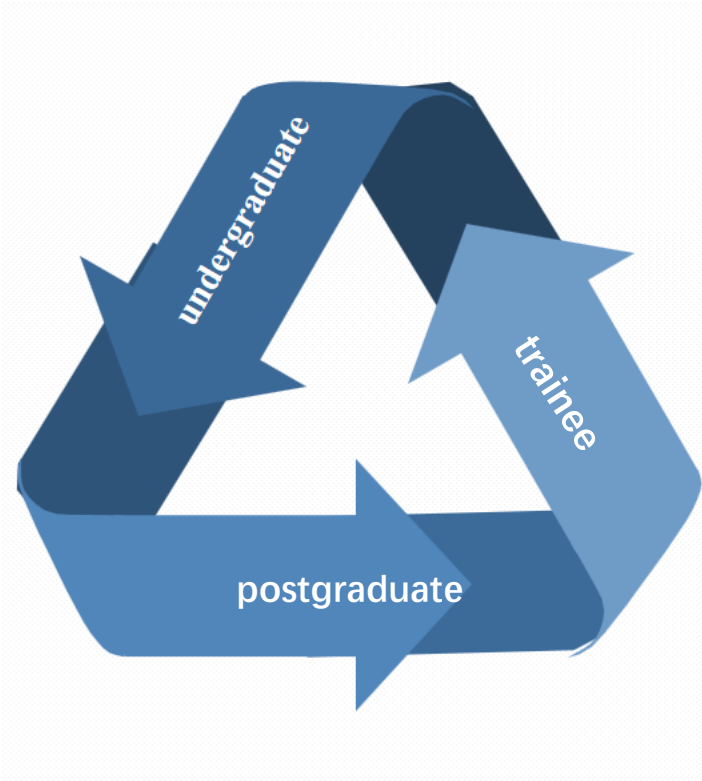
Standardized teaching model

Standardized educational practices



CJLU is one of the universities in China authorized to grant bachelor's degree in standardization, also the winner of the inaugural “ISO Award for Higher Education in Standardization” in the world. Most notably, CJLU has the first undergraduate major of standardization engineering in China. At CJLU, standardization education is aimed at both students majoring in engineering technology and students majoring in management and economics with non-technical backgrounds. For example, students majoring in business administration, international trade and quality management have solid knowledge in standardization.

02. Standardization education to non-technical students



For undergraduates

The course education is in the form of public courses, professional elective courses, event competitions and lectures and others for the undergraduates.

For postgraduates

Professional practice and case teaching will be added for the postgraduates.

For trainees

With modular curriculum, great attention is paid to the practice of standards formulation and enterprise standard system establishment.



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Undergraduate students of non-standardization majors: focus on developing the concept of standardization and understanding the basic methods of standardization

- **Course selection:** taking standardization courses as the general course of technical education does not involve the content of technology, but it will permeate the idea of technology governance and make students realize the important role of technology governance. **For example, we will discuss with students: how can standards promote industrial integration and development, how to unify regional markets, and how to improve the efficiency of collaborative governance?** We will also teach students the most basic methods of standard development, so that they can understand the process of standard development and the way to participate in international standardization. These do not necessarily require technical background knowledge.



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- **Standardization competition:** National Standardization Olympic Competition for college students. Popularize standardization knowledge and disseminate standardization concepts through competitions. **For example, the 2022 competition has the following themes to choose from: Standardization of peak carbon dioxide emissions and carbon neutrality; Standardization of smart city ; Standardization of green campus ; Standardization of public services; Science popularization and standardization; Standardization of Digital; Standardization of sustainable development.**



数字时代的标准化
美好世界的共同愿景
A SHARED VISION FOR A BETTER WORLD

WORLD STANDARDS DAY
世界标准日 14 OCTOBER 2022
IEC ISO ITU





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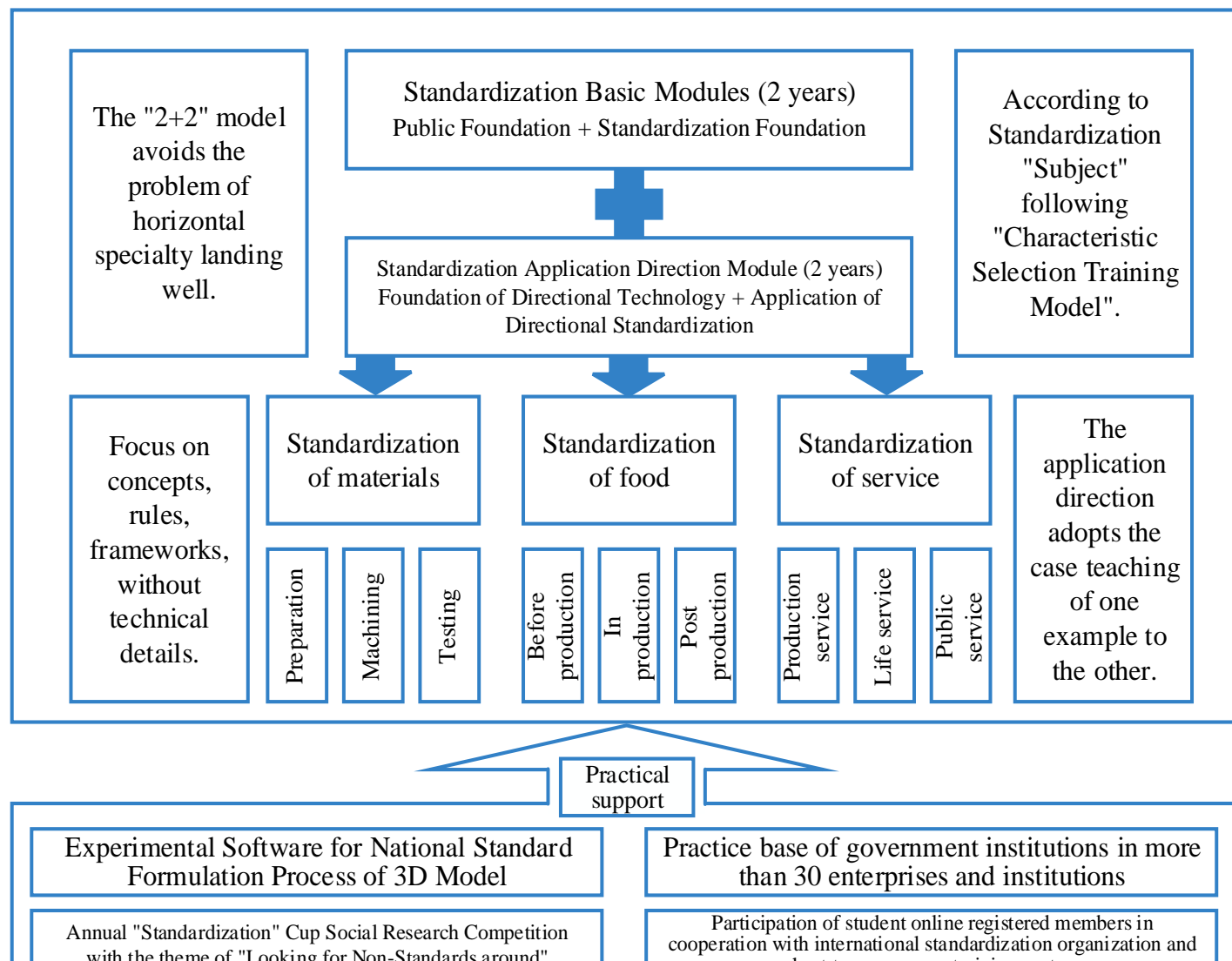
Undergraduate students of non-standardization majors: focus on developing the concept of standardization and understanding the basic methods of standardization



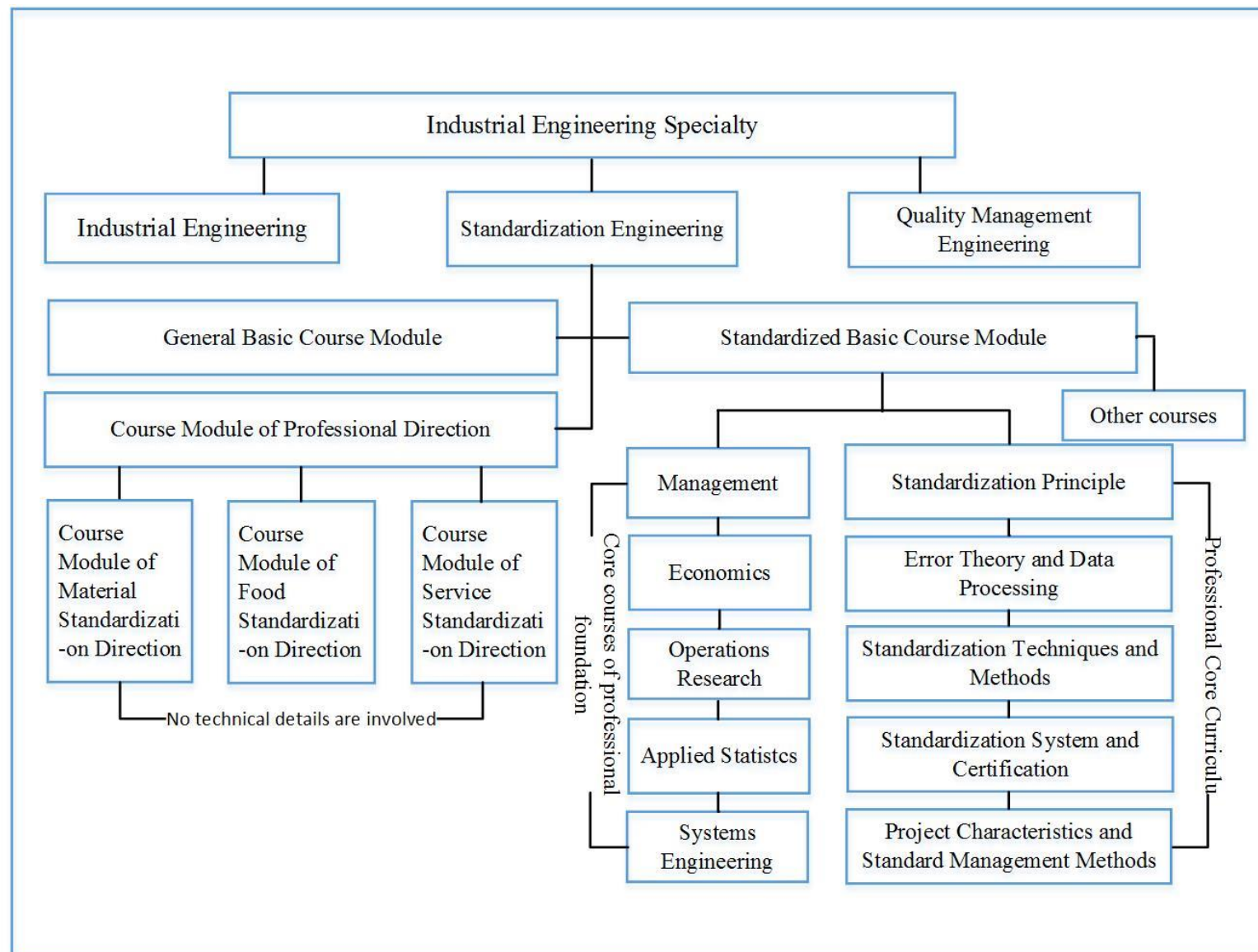
- **Develop student standardization technical committee.**
The standardization technical committee of student education evaluation, student digital economy service standardization technical committee, student common prosperity evaluation standardization technical committee and student social new retail management standardization technical committee have been developed. It is an innovative training activity for international standardization talents carried out at CJLU in China by the Standardization Administration of China and ISO.

Undergraduate students in standardization engineering and related majors: offer corresponding technical courses

Framework diagram of training mode for standardization engineering specialty



Frame Diagram of Curriculum Module for Standardization Engineering Specialty



The **standardization courses** of China Jiliang University

Basic theory and method	The application and practice	Professional field
Standardization (standardization introduction, standardization engineering)	Standard setting	Agricultural standardization
Introduction to standardization (standardization introduction)	Enterprise standardization	Logistics standardization
Standardization principle	Standardization systems and certification	Standardization of services
Systems engineering	International standardization	Tourism standardization
Project features and the methods of standardization management	Technical trade barriers	E-commerce standardization
Standardization strategy	Standardization English	Standardization of public services
Reliability	Intellectual property and standardization	
Error theory and data processing	Standard implementation and supervision	

Graduate students without technical background

- **Develop standardization courses that meet the training objectives of professional talents:** standardization engineering, technical trade measures, international standardization, and open standard formulation
- **Standardization research:** standardization governance, standardization policy, standards and innovation, standards and intellectual property

Relevant papers on standardization research

Mechanism of latecomer enterprises' technological catch-up in technical standards alliances – An ambidextrous innovation perspective

Jing Hu^a, Yilin Wang^b, Shengnan Liu^{c,*}, Mingshun Song^a

^a College of Economics and Management, China Jiliang University, Hangzhou 310018, China

^b Zhongchao Ink Co., Ltd., Shanghai 201315, China

^c School of Finance, Nanjing University of Finance and Economics, Nanjing 210003, China

Article

Standard Radiation: A New Perspective Leading the Coordinated Development of Urban Agglomerations

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Article

Does Standardization Improve Carbon Emission Efficiency as Soft Infrastructure? Evidence from China

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2 Training Content

Special Training on Standards Boosting High-quality Development

Day	Time	Teaching	Content
Mon.	8:50-11:30	Lecture	New Era, New Standards, New Quality --- The New Standardization Law and Quality Improvement
	14:00-17:00	Lecture	Brand Construction Leading Quality Enhancement --- A Case of “Zhejiang Made”
Tues.	8:30-11:30	Lecture	Deepen Standardization Supply-side Structural Reform; Lead the Development of High-quality Transformation
	14:00-17:00	Lecture	Standards Make the City Smarter
Wed.	8:30-11:30	Lecture	Standardization and Technical Innovation, IPR
	14:00-17:00	Field-based Instruction	Standardization on Party Building
Thurs.	8:30-11:30	Lecture	Establishment and Management of Standardization Pilot Demonstration
	14:00-17:00	Field-based Instruction	Ecological Civilization: Agriculture, Tourism and Beautiful Village Standardization
Fri.	8:30-11:30	Lecture	Interpretation of the Standardization Reform Policy
	14:00-17:00	Lecture	How to Realize Standardization in Cities

Trainees in continuing education

Modular curriculum design: basic standardization topics, standard formulation topics, enterprise standard system topics, and industry standardization topics (depending on the industry of the trainees).

We also have curriculum design. When facing students without technical background, we can take management standards as the design content.

A series of international education platforms have been established.



ISO
Standardization training base

IEC
International Talent Training Base

OIML Training Center
(Hangzhou)

Standard talent
training

The Standardization teaching resources

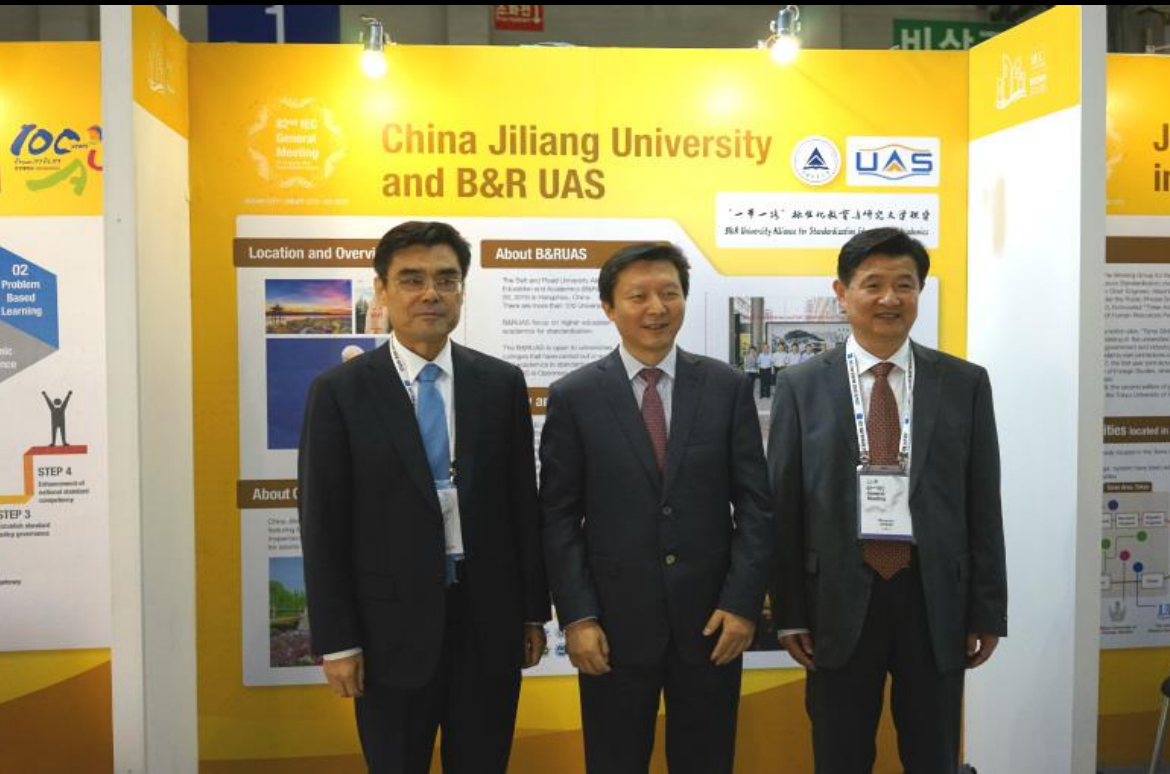
At present, there are **150** professionals in standardization, with senior professional titles accounting for **52%**. Served as the chair of ISO/TC321, honorary chairman of ICES, domestic convener of IEC/TC68, and **15** registered experts in international standardization.

More than **50** faculty serve as committee members for ISO technical institutions and national professional standardization commission.

The university has hosted or participated in the formulation of more than **60** international and national standards and more than **30** industry and provincial local standards.

The university has successively hosted over **50** scientific research projects of provincial level and ministerial level in standardization.

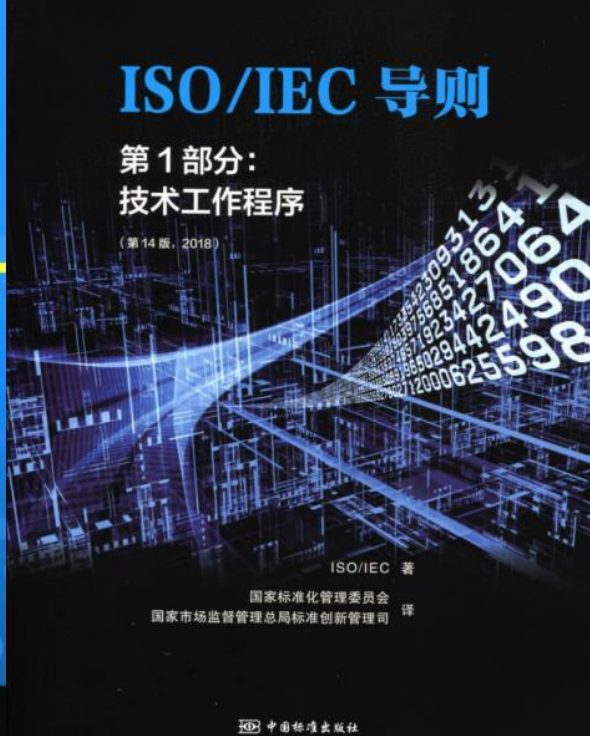
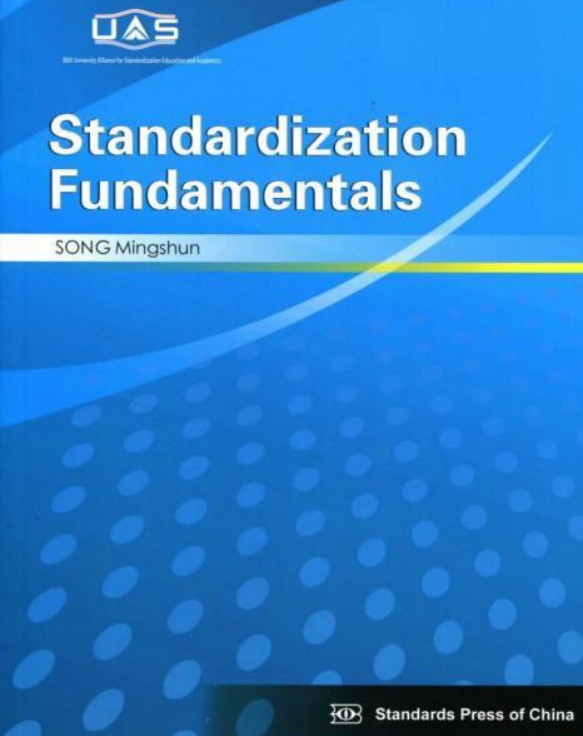
More than **30** academic papers relevant to Standardization Education and Study have been published since 2010.



Achievements

1) CJLU has exerted certain international influence.

- CJLU participated in the development of two international standards for standardization education, including ISO IWA 30;
- CJLU was invited to share school running experience at the United Nations, ISO Conference, IEC Conference and more than 20 international conferences;
- CJLU hosted the "World Cooperation Organization Conference on Standardization Education" sponsored by the three major international standardization organizations (ISO, IEC, ITU);
- It led the establishment of the B&R University Alliance for Standardization Education and Academics (B&R-UAS), with 118 universities from 36 countries as its members.



Achievements

2) We have developed a complete international education resource system about standardization.

- CJLU has compiled the only standardization comprehensive textbook in English in the world, *Standardization Fundamentals*.
- It offers more than 20 courses in English, including "Standardization Fundamentals" and "Introduction to Quality and Technical Supervision".
- Several teachers have worked as technical experts and working group members in the ISO Standardization Technical Committees.
- A pool of international standardization teachers and experts has been established, of which 60% of teachers in standardization related majors have overseas study background, and more than 20 foreign experts have been hired.



Achievements

3) It supports the cultivation of high-end talents in standardization in China and even in the world

- CJLU continues to carry out various training activities, such as "ISO/TC, SC Chairman", "ISO Secretary Week", "ISO/TC, SC Voters";
- It has trained 169 international students from 24 countries in standardization related fields, and has set up standardization related courses in Confucius Institutes, continuously providing high-quality talents for standardization work in various countries.



03

Suggestions and prospects

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03. Suggestions and prospects

We need to bring more standardization knowledge to technical experts, so that more technologies can reflect the idea of standards. In standardization education and training, curriculum modules can be developed by industry and field, such as digital standardization, supply chain standardization, etc.



03. Suggestions and prospects

We propose to set up a standardization online course resource database and a database of experts on relevant standardization policies and standardization governance research to make teaching and research work together.



03. Suggestions and prospects

There should be more in-depth cooperation between the B&R University Alliance for Standardization Education and Academics (B&R-UAS), UNECE, and especially WP.6. Through academic exchanges, education and training, standards systems should be introduced and passed on, and advanced experience in standards governance should be shared. At the same time, we should also strengthen cooperation with ISO, IEC and relevant countries in the field of standardization education and training to achieve mutual benefit and common progress.



Thank you!

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