SJTU SDG July Camp

The SJTU SDG July Camp is a program offered by Shanghai Jiao Tong University that integrates the United Nations Sustainable Development Goals (SDGs) within a multidisciplinary framework, engaging a diverse body of students over a series of collaborative and interdisciplinary online courses.

Features

- ✓ Focus on SDGs
- ✓ Collaborative Online International Learning (COIL)
- ✓ Project-Based Learning (PBL) & Group-Based Learning (GBL)
- ✓ Cultural and disciplinary diversity in each group
- ✓ Free for students from SJTU partner universities and U21, APRU, etc.

Core Competencies

- ✓ Intercultural Competence
- ✓ Transferable Skills
- ✓ Active Learning
- ✓ Teamwork and Leadership
- ✓ Critical Thinking and Problem-Solving

Global Competence Office, International Affairs Division, SJTU
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2022

- 11 courses
- 12 instructors from SJTU
- 19 instructors from 14 partner universities
- 428 students from 22 countries
- 92% of participants rated the program better than four stars on a five-star scale in feedback survey

2023

- 12 courses
- 21 instructors from SJTU
- 44 instructors from 31 partner universities
- 503 students from 39 countries
- 96% of participants rated the program better than four stars on a five-star scale in feedback survey

Public Lectures

Multiple public lectures will be provided by experts/officials from global institutions

Opening Ceremony & Icebreakers

Open to all students

Cross-cultural Activities

Weekly theme-based activities open to all students

COIL

Collaborative teaching & collaborative learning

Closing Ceremony

Celebrating the course experiences by conducting the course reports

Transcript & Certificate

Certificates and transcripts will be provided to students who have successfully completed the chosen course

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COURSE OVERVIEW

ESG IN BUSINESS LAW AND ECONOMIC GROWTH

GOAL: 3, 6, 8,13

Course Description:

The course delves into topics in business law but in a novel context: ESG/SDG, and economic growth, Global concerns about climate change, economic security and the resiliency of critical supply chains, coincide with increasing questioning of the role of publicly traded corporations. This concern manifests itself in calls for corporations to respect the interests of an ever-expanding network of stakeholders. Terms such as SDG or ESG reflect the belief that corporations are in reality, fiduciaries, and are obligated to strive for sustainable profits by jettisoning "short-termism" and taking into account long-term sustainability in the contexts of the environment, social justice and other goals. Accordingly, boardrooms are increasingly facing demand and navigating complex social issues pressures from stakeholders to address an expanding list of challenges far beyond the classical ambit of a corporation's purpose. To conclude, in the context of above, the course will discuss obligations of boards, corporation development, economic growth and other issues.

INTERNET LAW AND ETHICS

GOAL: 9

Course Description:

The development of the Internet and, more recently, Internet-based applications such as Facebook, Kaixin Wang, Weibo, Twitter, Whatsapp, Wechat, Spotify, Uber, Didi Taxi, Airbnb have generated new types of communications between individuals across the globe. The rise of the internet has disrupted many aspects of our society, including law. Courts, policymakers, and law enforcement officials around the globe are struggling to resolve the clashes, both by adapting existing legal remedies and by developing new ones. This course will examine the effect of the internet on varied areas of legal doctrine, including intellectual property, technology related ethics, privacy, jurisdiction, contract, and collective enforcement of consumer protection in the context of digital economy. It also considers specialized internet regulation such as intermediary liability regimes, platform regulation, new challenges for the policymaking regarding the sharing economy. This course will explore how China (and for a comparative law analysis also the United States, European Union, and other countries) are currently responding to the new challenges and are likely to respond in the coming years. The course will be of interest to students who are interested or specialized in IP and related areas, those who anticipate working in digital industries, or anyone who finds online technology fascinating.

LOW-CARBON PROJECTS IN GLOBAL CARBON TRADING SYSTEM

GOAL: 6,7,11,12,13,14,15

Course Description:

This course is a college public elective course for all undergraduates, including domestic and international students. In class, students can comprehensively understand the relationship between environment protection and social sustainability. Since the world is a whole, carbon right or carbon emission right (i.e. Certification Emission Reduction, CER) is not only a type of economic interest, but also a type of international development right. By the way of carbon trading, integral emission reduction can be efficiently put into action at low cost. Carbon trading is beneficial to both sides of the transaction, and helps promote social harmony and sustainable development of enterprise, region, country and the whole world. Because this course involves politics, economy, culture, society, science, technology, and other fields, it inspires students to love the Earth and work hard for it, which will lead them to become outstanding leaders in all kinds of enterprises and government with innovative capabilities in the new era.

Carbon trading is an economic means of carbon reduction with high efficiency, and therefore it has become the most adopted way for contemporary international society to cope with global climate change and for China to achieve the goals of carbon peak and carbon neutrality. By introducing international low-carbon projects in carbon trading system, this course assists students to understand the background and theory foundation of carbon trading ; to analyzes the reshape of global strategic industry and economy system; to explains governance of all levels of governments and commissions; and to discusses technologies of greenhouse-gas-emitting entities, and roles and policies of the third party in the trading of carbon emission rights.

GENDER IN DEVELOPMENT AND EDUCATION

GOAL: 4,5

Course Description:

Promoting gender equality and educational equity stands as a pivotal objective within the United Nations' 2030 Sustainable Development Goals (SDGs). It encapsulates empowering women and girls, transcending mere fundamental rights to deeply intertwine with global peace and societal progress. Education emerges as a potent avenue to bolster the agency of women on a worldwide scale, with educational equity and gender equality acting in symbiosis. This course, framed on a global canvas, aims to showcase exemplary policies and practical implementations of gender equality and educational equity across nations, guided by the SDGs.

Expertise from professionals engaged in international organizations will illuminate the forefront of educational practices fostering gender equality globally. Leveraging a project-based learning approach, integrating timeless theories from education and sociology, participants will acquire research knowledge and methodologies pertinent to the subject matter. The course endeavors to equip students with fundamental insights into gender and education within the realm of international development. Students will grasp cutting-edge policies and practices in the global arena, broadening their global perspective and nurturing a sense of a shared human destiny—a crucial component of a sustainable future.

Furthermore, students will delve into educational and sociological theories, engaging in profound interactions and collaboration with international peers from diverse disciplines. This cross-disciplinary exchange aims to enhance their global competence

SHANGHAI JIAO TONG UNIVERSITY

COURSE OVERVIEW

FOOD SYSTEM AND SUSTAINABILITY

GOAL: 2,3

Course Description:
Food systems describe the food paths from source to consumer. This comprehensive course delves into the critical intersection of food systems and sustainability, offering a profound understanding of how our food choices impact the environment, society, and the economy. Through interdisciplinary exploration, students will gain the knowledge and tools needed to navigate the complexities of today's global food systems. This course will help students understand the factors affecting food systems. Students will examine technological aspects of modern food systems, covering the environmental, economic, and social sustainability, food resilience, the roles of innovation and technology in modern food systems, and consumers' awareness.
This course combines lectures, group case studies, discussions, and practical exercises like group presentation. Students will engage in critical thinking, problem-solving, and collaborative projects to address real-world challenges in food systems and sustainability. Guest speakers from various sectors of the food industry will provide unique insights. By the end of the course, participants will be well-equipped to make informed decisions and contribute to the transformation of food systems towards a more sustainable and resilient future.

NET ZERO-CARBON FUELS

GOAL: 7,13

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

ECOSYSTEM RESTORATION AND SUSTAINABLE DEVELOPMENT SYSTEM

GOAL: 6,7,11,12,13,14,15

Course Description:
Given the current speed of habitat and species loss caused by human development, the restoration of degraded ecosystems is one of the greatest challenges humankind is facing. For this reason, the United Nations declared the current decade (2021-2030) as the UN Decade on Ecosystem Restoration. This global effort will require experts on ecosystem science, management and design. This holistic approach will allow for a deeper understanding of how ecosystems recover from human disturbance and how we can use this knowledge to increase the currently limited performance of restoration practice. This course is particularly suited for students with interests in nature conservation, the natural component of landscape architecture, or ecosystem management in a broad sense. This course will allow students to exchange their knowledge in a multidirectional learning environment where we all will address real world restoration cases. Through research, we will learn how forests and other ecosystems have changed during this time to apply that knowledge to a real restoration project that students will develop. We will increase our understanding of what nature is for humans and the Earth system, we will increase study our connection to it. This course will arm you with one of the most important tools to work with and for nature in the coming decades.

EMERGING SEMICONDUCTOR DEVICES AND THEIR SUSTAINABLE INNOVATIONS

GOAL: 1,4,5,10,11

Course Description:
This course is designed for both local and international graduate students, as well as senior undergraduate students. It is conducted entirely in English, and participants are expected to have a certain foundation in microelectronics and basic English communication skills.
With the continuous miniaturization of silicon-based CMOS device process dimensions, integrated circuits have experienced rapid development in the era of "Moore's Law," driving progress in the entire information society. However, as the physical limits of devices approach and Moore's Law becomes challenging to sustain, the performance of devices not only results in excessive global energy consumption in integrated circuits but also creates technological barriers that concentrate the IC dividend in a few countries. With the development of technologies such as AI and emerging semiconductor devices, barriers in various links of the IC industry chain are expected to significantly decrease, benefiting a larger global area.
This course focuses on emerging integrated circuit technologies in the "post-Moore era," introducing the working principles, modeling methods, and circuit design methods of several emerging semiconductor devices. It also incorporates artificial intelligence to expedite the modeling and design cycle and reduce inequality between regions. The course will be delivered through a combination of lectures and practical exercises. Lectures will cover the theoretical foundations, methods, and algorithms related to data-driven compact modeling artificial intelligence technology. Practical exercises will involve applying these technologies to real transistor modeling and circuit design problems, guiding students to use datasets and software tools provided by the instructor.

COURSE OVERVIEW

SOCIOCULTURAL PERSPECTIVES ON INEQUALITY GENDER, CULTURE AND TECHNOLOGY

GOAL:5,10,12

Course Description:
In a rapidly evolving world, the pursuit of a sustainable future is paramount. In this course, we will tackle the Sustainable Development Goals (SDGs) from the intersection issue of inequality. Our approach will draw from extensive research and real-life case studies spanning multiple disciplines, including sociology, psychology, and communication. Our goal is to comprehensively grasp the diverse forms of inequality and explore strategies for their reduction. We aim to investigate the potential applications and extensions of sociocultural theoretical perspectives in understanding gender, cultural, and digital capital. We will adopt a multi-level approach, critically analyzing gender dynamics at individual, interactional, and structural levels. This analytical framework will be applied to various facets of social life, encompassing the self, family, school, and the workplace. Our exploration extends to the realm of language and social media content, where we will scrutinize how cultural goods are produced and consumed, emphasizing equitable and inclusive practices. Furthermore, we will dissect the role of technology and digital platforms in shaping access to cultural resources and opportunities, with a strong focus on bridging the digital divide and ensuring equal participation for all individuals. Throughout the course, discussions and assignments will challenge students to apply academic insights in addressing pressing societal issues. We will engage in a critical examination of common-sense assumptions related to culture, politics, and psychology, encouraging students to replace them with evidence-based reasoning and emphasizing the development of critical thinking skills.

OCEAN SUSTAINABILITY IN A CHANGING CLIMATE

GOAL:1,6,7,8,9,12,14

Course Description:
The ocean is possessing tremendous value for the sustainable development of human, and playing a crucial role in mitigating climate change. It is the largest carbon sink, and drives the heat balance between the ocean and the atmosphere, influencing dynamic phenomena such as storm surges and typhoons. The ocean also has profound impacts on environmental services, economic growth, and cultural development. With the global population and demand on the rise, questions emerge about how to transform unsustainable fishing practices, balance supply and demand, and enhance the scale and efficiency of the ocean economy. Additionally, how to effectively protect and utilize the ocean facing climate change presents an increasing challenge. We are confronted with an ever-growing array of urgent issues that require solutions. As modern marine engineering technologies advance, there is an opportunity to bolster our understanding of the ocean and increase the benefits of marine resource utilization. This can be achieved on a multi-dimensional and multi-level basis to enhance the ocean industry, all while emphasizing environmental sustainability. The development of clean ocean energy sources is gaining strong momentum, contributing to both the conservation and efficient utilization of marine resources.
This course aims to analyze and address issues related to the sustainable utilization of the oceans and the response to climate change from various perspectives within the fields of marine science, ecological engineering, and the marine industry. The course will provide a systematic review of global climate change and environmental issues related to the oceans, existing marine development technologies, indicators, and challenges, as well as the relationships between industry, economy, and society, and methods for addressing climate change. This course will integrate marine biology, engineering, environmental science, and economics to offer a diverse educational approach that combines theory and practice. It will outline methods for addressing climate and environmental issues, providing theoretical support for promoting the sustainable development and utilization of the oceans. This course will empower the future inovators and changemakers for a more sustainable ocean.
The participants will team up and develop one of these projects to solve the major challenges: 1) Innovation challenge: remove plastics from marine ecosystem; 2) Engineering Challenge: ecosystem engineering to reverse the climate; 3) Business challenge: sustainable low-carbon sea farm; 4) Technique challenge: transfer across marine observation and resources.

SUSTAINABLE MARINE ENVIRONMENT INTELLIGENT MONITORING

GOAL:14

Course Description:
This course focuses on the theme of "protection and sustainable utilization of oceans and marine resources to promote sustainable development". The course adopts a combination of theory and practice to introduce related technologies and typical applications of ocean intelligent autonomous monitoring. Typically, the course includes unmanned surface vehicle(USV),unmanned aerial vehicle(UAV), autonomous underwater vehicle(AUV), and related algorithms for data processing.
After successfully completing this course, students are able to:

- have a comprehensive and preliminary understanding of the field of sustainable ocean intelligence autonomous monitoring.
- understand and master the overall architecture and key technologies of the three important autonomous systems of USV, UAV, and AUV.
- implement basic ocean intelligent autonomous monitoring system with programming software.

COURSE OVERVIEW

LOW-CARBON BUILDINGS AND CITIES

GOAL:7,9,13

Course Description:
Course: This is a public course for all undergraduates.
Course Background: Global warming, air pollution and energy shortages are closely-related to energy supply and demand in cities. The low-carbon transformation of cities is one of the significant approaches to solve these problems. The basic unit of low-carbon cities is the low-carbon building that includes green buildings, solar buildings, prefabricated buildings and intelligent buildings. Since the carbon emissions of building sector is remarkable, the reduction of building carbon emissions is critical to achieving the global carbon neutrality.
Main Contents: Aiming at the key methods of low-carbon cities and their basic units of low-carbon buildings, the teaching content of the course mainly includes the basic theories and technologies of green buildings, solar buildings, prefabricated buildings, intelligent buildings, and low-carbon cities. These methods can effectively reduce building carbon emissions and help achieve low-carbon buildings and cities using low-carbon technology, green materials, and artificial intelligence technology.
Course Objectives: Let students know the building methods to achieve carbon peak and carbon neutrality, master basic knowledge of building energy conservation, artificial intelligence, etc., and understand the technologies for the reduction of building carbon emission.

CULTURE-DRIVEN APPROACH FOR SUSTAINABILITY: GLOBAL PRACTICES IN THE CULTURAL AND CREATIVE INDUSTRIES

GOAL:3,5,8,11,13,17

Course Description:
The course centers on the synergy between culture and creative industries and the United Nations Sustainable Development Goals (SDGs) through a culture-based approach. It prioritizes the intersection of culture, creativity, and sustainability. The course's main goals are to explore, understand, and leverage culture as a driving force for the SDGs, with particular emphasis on four frontier areas intervened by cultural actions, including gender equality, social wellbeing, climate change and community transition.
Students can expect an interdisciplinary approach, featuring expert lectures, case studies, and group discussions, to provide insights into the latest theoretical concepts, industry practices, and public policies. The course also includes a module dedicated to Chinese studies, encouraging international academic exchange and knowledge sharing.
By offering team-based practical exercises that employ design thinking methodologies, the course inspires students to apply culture-based approaches to real-life challenges. The primary goal is to cultivate an international perspective and critical thinking on global issues, enhance language and organizational collaboration skills, and foster abilities in international academic exchanges.
The course emphasizes the urgency of leveraging culture for sustainability. It recognizes the power of culture in fostering individual and collective well-being, challenging gender norms, shaping sustainable territorial transition, addressing climate change. With the global need for innovative solutions to pressing challenges, the course stands as a timely initiative, exploring the vital role of culture and creative industries in achieving sustainable development.
In conclusion, students can expect to gain a deep understanding of the relationship between culture, creative industries, and the SDGs, equipped with the knowledge and skills to advocate for culture-based sustainable policies that have a lasting impact on our world. This course is an essential platform for addressing urgent global issues and driving positive change through culture and creativity.

GREEN SHIPPING AND MARINE RENEWABLE ENERGY

GOAL:7,9

Course Description:
The world has abundant natural energy resources from the wind, wave and tides. Being different from the traditional fossil fuels, these energy resources will never run out. Renewable energy is essential for reducing the potential devastating effects of climate change, and protecting the natural environment for future generations. Therefore, when we are talking about the future offshore industry, marine renewable energy stands in the breach. At the same time, the shipping industry is on a revolution for zero emission and unmanned development. There is an urgent demand to develop the technologies to support the sustainable goal in the ocean engineering sectors. This course will introduce the latest technologies in the field of marine engineering and new marine energy in the form of a lecture series, while focusing on the connection between green and smart ships and marine renewable energy resources, and discussing the future green marine network system. This course takes the interaction between teachers and students as a medium. Through direct dialogue with international top scholars with diverse backgrounds, students can exchange knowledge and ideas with teachers on an equal footing and achieve the best integration of teaching and learning.

COURSE OVERVIEW

THE URBAN MANAGEMENT FOR PORT CITIES IN THE 19TH AND 20TH CENTURIES

GOAL:3,11

Course Description:
This course aims to answer the question of how modern port cities managed themselves in the 19th and 20th centuries and created an intercultural sphere for global inhabitants. The core of this course focuses on East Asian port cities which were opened by the "unequal treaties" with the foreign powers in the mid-19th century. The opening of the port cities in East Asia also provided the world with an access to settle down in these treaty ports and provided China, Japan and Korea with an opportunity to observe and learn from the West. Because of the cultural gap between the East and the West, the port cities naturally built up settlements and concessions for dividing various communities. The design of which could decrease the potential tensions between ethnicities or nationalities but it could not stop the following issues of globalisation, such as the spreading of diseases, crimes, pollution, etc. Thus, these port cites then had to work out solutions for communicating different concessions and settlements.
The other focus of this course is to bring in specialists who study other continents' port cities, such as in North America and Continental Europe, and to provide students with a comparative perspective for advanced knowledge of the urban issues shared by all port cities. This course then focuses on the shared issues, such as cultural preservation, migration, crimes, diseases, pollution, inflation, etc., in American and European port cities. Thus, Professors Lockley, Purseigle, Perez-Garcia and Du are invited to demonstrate their knowledge about port cities in North America and Europe. Students can then understand how the shared challenges affected global port cities in the 19th and 20th centuries.

EDUCATIONAL CHALLENGES STATUS AND SOLUTION DESIGN

GOAL:3,4

Course Description:
This course is a summer course for undergraduates. It primarily introduces some of the prominent challenges existing in the current global education system. Through a hands-on approach, the course aims to inspire students to design potential solutions to these challenges, enhancing their innovative thinking and practical abilities.
The main teaching content includes: (1) Global Education Status and Challenges: Discussing issues of global significance such as education accessibility, equity, and quality. (2) Technology and Education: Delving deep into how technology impacts education, including the digital divide, opportunities and challenges of online education, and how technology transforms teaching methods. (3) Diversity and Inclusivity in Education: Exploring how to cater to students of different backgrounds, abilities, and needs, including special education and multicultural education. (4) Educational Design Research Methods.
The primary learning objectives of this course are: (1) To learn and understand the main challenges in the contemporary education system, including the themes and underlying historical, societal, economical, and cultural reasons. (2) To learn and master educational design research methods. (3) To co-create solutions to educational challenges based on educational design methods.
Specifically, the course aims to foster the following abilities in students: (1) Understanding and Analytical Skills: To understand and analyze the main challenges faced by contemporary education, as well as the social, economic, and technological factors behind these challenges. (2) Critical Thinking Skills. (3) Practical and Application Skills: Students will learn how to design and implement effective educational methods to address specific educational challenges. (4) Interdisciplinary Collaboration Skills: Encouraging students to collaborate with peers from different backgrounds and fields to jointly explore and solve educational issues.

TRADITIONAL MEDICINE AND THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

GOAL:1,2,3,8,11,12,15

Course Description:
The course "Traditional Medicine and the United Nations Sustainable Development Goals" will enable participants to learn through online lectures, discussion, and then collaborate to complete the project connecting traditional herbs to SDGs. The course aim to encourage students from different cultural backgrounds collaborate to explore the strategy for human renewable development, especially from traditional medicine. Chinese and international students will attend series of online lectures by the instructor that cover UN SDGs, basic knowledge of traditional medicine and research progresses as well as philosophic thinking of medical science. Students will be divided into groups. Each group will choose a medicinal plant from a given list, create a group e-poster and discuss the connection of this medicinal plant to the principal of the SDG of the project: SDG 3 Good Health and Well-being. Under the guidance of the teacher, students will explore how this medicinal plant may address additional SDGs and global issues. Some examples of additional SDGs would be, but are not limited to, SDG 1, SDG 8, SDG 10, and SDG 15. Students will need to explain why and how the additional SDG(s) can be addressed.

Please scan the QR code for more details.