

2023 哈爾濱工業大學國際暑期學校

哈爾濱工業大學坐落於“盛夏避暑天堂”的冰城夏都哈爾濱市，2023 年夏季學期將繼續舉辦不同主題、特色鮮明的線上國際暑期學校，分別聯合各自領域國際知名教授，講授專業前沿知識，與來自國內外優秀本科生探究學術前沿問題，在專業熱門領域進行探討交流、合作創新。

哈爾濱工業大學 2023 國際暑期學校詳細資訊詳見附件：

報名及有關事宜：

- 1.每名學生只能報名參加壹個項目，全程英文授課；
- 2.請於 2023 年 5 月 11 日 12 點前將報名參加學生的電子照片（正面、免冠、由於出具正式成績單，若不需要成績單可不提供）及學生報名匯總表（附件 2）電子版發至 zhangquan@hit.edu.cn；
- 3.報名截止後，各主題項目負責教師會通過建立 QQ 群或微信群組方式直接通知學生後續上課事宜，請在報名時至少提供微信或 QQ 一種線上通訊方式；
- 4.聯絡人：張全、zhangquan@hit.edu.cn。

附件：1.哈爾濱工業大學 2023 上國際暑期學校項目介紹

2.哈爾濱工業大學 2023 年國際暑期學校學生報名匯總表

哈爾濱工業大學港澳臺辦公室

2023 年 4 月 18 日

INTERNATIONAL SUMMER SCHOOL

INTELLIGENT INFORMATION TECHNOLOGY IN THE ERA OF INTERNET OF THINGS

Jul 10 – Jul 23, 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

The theme of this international summer school is “Intelligent Information Technology in the Era of the Internet of Things”, mainly starting from cutting-edge technologies in fields such as 5G/6G, artificial intelligence, the Internet, the Internet of Things, and industrial big data. Through a series of courses and themed lectures by world-class scholars, undergraduate students are guided to understand the latest development status and future trends in the field of advanced information and communication technology, deepening the understanding of 5G/6G AI, Industrial Internet and other technologies’ understanding of intelligent manufacturing and Industrial Internet, in-depth understanding of the profound impact of the increasingly intelligent information and communication technology of general sense on the world pattern (politics, economy, culture, etc.) and human life mode in the era of intelligent manufacturing and artificial intelligence, and cultivating undergraduates’ interest in future information and communication technology, artificial intelligence technology and related cross-cutting research fields.

INTERNATIONAL SUMMER SCHOOL LEARNING AND ACTIVITY CONTENT

This international summer school includes: academic lectures, on site teaching, and innovative practice. The overall content is shown in the table below.

Module	Content	Class Hour	Credit
Academic Lectures	Intelligent Information Direction Theme Report Lajos Hanzo (Academician)	2	2
	IRS Assisted RF and Optical Wireless Communication Robert Schober	2	
	The Development and Evolution of Communication Technology Hsiao-Hwa Chen	4	
	5G Internet of Things Network Yonghui Li	2	
	Energy Self-sufficiency of Future Wireless Networks Kun Yang	2	
	Basic Wireless Performance of Buildings Jiliang Zhang	2	
	Optical Interconnection and Trusted Intelligence of 6G Vehicle Network Wei Ni	2	
	Economics and Game Theory Guiding Emerging Communication Networks Lingjie Duan	4	
	Smart Grid and Future Energy - How Information and Communication Technology (ICT) Will Change Our Lives Hongjian Sun	4	
	Mobile Edge Computing for 6G and Internet of Things Yan Zhang	2	
	Optimization of RAN Services Based on AI Tao Chen	2	
	Energy Collection Communication: Theory and Principles Yunfei Chen	4	
	Change Detection Based on Remote Sensing Data Tian JiaoJiao	2	
	Environmental Perception and Modeling in Autonomous Driving Shiyong Cui	2	
On site Teaching	International Cutting-edge Technologies for 3D Video Signal Compression and Communication Wei Xiang	16	1
Innovative Practice	Design of Wireless GPS Signal Source	32	2
Total credit hours		Total credits	
80		5	

INTERNATIONAL CUTTING-EDGE TECHNOLOGIES FOR 3D VIDEO SIGNAL COMPRESSION AND COMMUNICATION

Starting from the development history and application scenarios of 3D video, we will explain the technical key points in the collection, encoding, transmission,

rendering, and quality evaluation of 3D video in simple terms. Through this course, students are guided to understand the development history and compression standards of 3D videos, understand the compression process of 3D videos, and master the most basic 3D video compression methods.

DESIGN OF WIRELESS GPS SIGNAL SOURCE

For the practical and innovative activities of electronic information majors, supplemented by lectures and students' hands-on practice, with the goal of cultivating students' engineering and innovation awareness, and based on the combination of software and hardware applications, students are required to be able to integrate knowledge and engineering skills such as radio knowledge, communication modulation, programming and thinking. Through the process of requirement analysis, data query, scheme demonstration, design debugging, indicator testing, analysis and summary, the design and implementation of a GPS RF signal source based on software radio will be completed.

OTHER ACTIVITY ARRANGEMENTS

I. Visit and exchange of professional laboratories on campus

II. Report on the Advanced Achievements of Academician Liu Yongtan

III. Outdoor activities

CONTACT INFORMATION

Please contact Wang Meiyang at wangmy669@126.com(E-mail).

INTERNATIONAL SUMMER SCHOOL

INTELLIGENT ROBOT

Jul 2nd – Jul 14th, 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

The theme of this summer school is “Intelligent Robot”, with the course of a variety of teaching contents and activities with this theme. Technical links include “Frontiers of Robotics”, “Robotics and Artificial Intelligence”, “Micro and Nano fluid Mechanical systems”, etc. Through the International Summer School, we provide distinctive international summer courses for our students and students from other universities, and promote the improvement of students’ cross-cultural communication ability. Making full use of the resources provided by the National Key Laboratory of Robotics Technology and System in HIT, and fully cooperating with overseas scholars in an all-round way, this summer school gives full play to its characteristics and advantages as much as possible. In addition, as the feature of this summer school, we will provide students with practical activities of robot design and competition in the form of competition under the leadership of domestic and foreign tutors, so that students can truly understand the core of robot technology during this period, and through the combination of theoretical learning and design practice, students will appreciate the application prospect of robot in the field of mechanical engineering and related interdisciplinary disciplines.

ATTENDANCE REQUIREMENTS

Undergraduate or graduate attendees with background in mechanics, aerospace engineering, mechanical engineering, materials science, applied mathematics, etc. are welcomed. All participants must have a good command of English. Some lectures will be given in Chinese with translation in English.

LECTURES AND TALKS

The summer school offers three lectures and twelve seminars. Lecturers and speakers are invited from top institutions in Europe and China, including Commercial Aircraft Corporation of China, Cardiff University, Heriot-Watt University, Harbin Institute of Technology, University of Nottingham, University of Jefler.

Lecturer	Title	Institution	Topic	Class Hour
Kenneth T V Grattan	Professor, Fellow of the Royal Academy of Engineering	London Metropolitan University	Optical fiber sensing system	16
Hegao Cai	Academician of Chinese Academy of Engineering, Professor	School of Mechanical and Electrical Engineering	The development of intelligent robots	4
Zongquan Deng	Academician of Chinese Academy of Engineering, Professor	School of Mechanical and Electrical Engineering	The lunar rover and its intelligent components	4
Hong Liu	Academician of Chinese Academy of Engineering, Professor	School of Mechanical and Electrical Engineering	Intelligent space robot	4
Cyrille Breard	Doctor	Commercial Aircraft Corporation of China (COMAC)	Smart equipment on big planes	4
Zhirong Liao	Associate Professor	University of Nottingham	Advanced manufacturing technology	4
Emmanuel Brousseau	Professor	Cardiff University	Ultra-precision and micro-nano manufacturing	4
Xianwen Kong	Professor	Watt University	Parallel robot	4
Gurvinder S. Virk	Professor	The University of Jefler, Sweden	Intelligent sensing system	4

GROUP RESEARCH PROJECT

Participants will be grouped into 6 teams or more, each with 7-10 members, to work on a project on structural design and safety assessment of space vehicles in

omposite materials. Each group may select one from four areas: general design of space vehicles, structural dynamics and control, computation of strength and service life, structural health monitoring of space vehicles.

Week 1 (7.3-7.9)						Week 2 (7.10-7.15)				
	Mon	Tue	Wed	Thur	Fri	Mon	Tue	Wed	Thur	Fri
M	Lecture				Seminar	Training		Competition		Competition
A	Seminar				Tour					Award Ceremony

CONTACT INFORMATION

Please contact Prof. Geng Yanquan at gengyanquan@hit.edu.cn(E-mail).

INTERNATIONAL SUMMER SCHOOL

OPTOELECTRONIC INFORMATION MATERIALS AND DEVICES

Jun 25th - Jul 8th, 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

Optoelectronic information materials and devices play an important role in the development of technology fields today. Based on multidisciplinary integration, novel optoelectronic materials and devices have changed to the new generation of information, display, space and environment. Optoelectronic Information Materials and Devices International Summer School offers a variety of courses and lectures that focus on the latest research, design and applications. It is an excellent opportunity for participants to get access to frontiers of optoelectronic information materials and devices, to improve professional competence, and to make academic friends worldwide.

ATTENDANCE REQUIREMENTS

Undergraduate or graduate attendees with background in materials, chemistry, electronics, etc. are welcomed. All participants must have a good command of English. Some lectures will be given in English or Chinese with translation in English.

COURSES AND LECTURES

The international summer school offers a series of professional courses and lectures. Lecturers and speakers are invited from top institutions in America, Britain, Sweden, Korea, Denmark and China. The teaching team is composed of top-rank experts in the field of optoelectronic materials and devices, including two academicians of the Chinese Academy of Sciences and an academician of the European Academy of Sciences.

Lecturer	Institution	Topic
Prof. Wei Huang	Northwestern Polytechnical University, China	Technological Innovation Led by Flexible Electronic Technology
Prof. Iain McCulloch	University of Oxford, Britain	Design of Semiconducting Materials for Organic Electronic Applications
Prof. Alex K.-Y. Jen	City University of Hong Kong, China	Integrated Material, Interface, and Process Engineering for Highly Efficient Organic, Perovskite, and Hybrid Devices
Prof. Jianwu Xu	Linköping University, Sweden	Growth of High Quality Graphene and Cubic Silicon Carbide for Clean Energy Applications
Prof. Cunjiang Yu	The Pennsylvania State University, America	Flexible Optoelectronic Device Design for Health
Prof. Donghong Yu	Aalborg University, Denmark	Optoelectronic Material Design and Optimization
Prof. Bumjoon J. Kim	Korea Institute of Science and Technology, Korea	Bicontinuous Structure in Elastomeric Electrolytes for High-Energy Solid-State Lithium-Metal Batteries
Prof. Wei Zhang	University of Surrey, Britain	Heterojunction Structure Regulation and Performance Optimization

RESEARCH PROJECTS

Participants will improve themselves by discussing with the lecturers and participating in the optoelectronic design competition. Rich and varied, some activities are also arranged, such as visits to the museums and attendance to the graduation ceremony.

PROGRAM DATES AND TIMES

The International Summer School lasts for two weeks. The participants should arrive on time.

	Week 1 (6.26-7.2)					Week 2 (7.3-7.8)				
	Mon	Tue	Wed	Thur	Fri	Mon	Tue	Wed	Thur	Fri
M	Opening	Lecture	Course	Course	Lecture	Course	Course	Lecture	Competition	Visit
A	Lecture									Graduation

CONTACT INFORMATION

Please contact Prof. Zhang at yongzhang@hit.edu.cn (E-mail).

INTERNATIONAL SUMMER SCHOOL
ELECTRICAL INTELLIGENCE, DRIVE FUTURE

Jun 26th – Jul 9th, 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

Harbin Institute of Technology “Electrical Intelligence, Drive Future” International Summer School aims to provide a platform for undergraduates majoring in electrical engineering and related majors at home and abroad to understand the most cutting-edge development and application of the electrical engineering discipline, offer opportunities for students at home and abroad to exchange and learn, and create an atmosphere of professional international study and exchange. The project highlights the characteristics of smart manufacturing, smart energy and smart city, demonstrating the social significance and international influence of “Electrical Intelligence, Drive Future”.

ATTENDANCE REQUIREMENTS

Undergraduate or graduate attendees with background in Electrical Engineering, Electrical Machines, Power Electronics and Power Drives, Power Systems and Automation, Electrotechnical Theory and New Technologies etc. are expected. All participants must have a good command of English. Some lectures will be given in Chinese with translation in English.

LECTURES AND TALKS

The summer school offers 1 lecture and 8 seminars. Lecturers and speakers are invited from top institutions of China and Europe, including University of Oviedo, Danish Technical University, University of Technology Sydney, University of L'Aquila, French Advanced Institute of Telecommunications and Mining, and Harbin Institute of Technology.

Lecturer/ Speaker	Institution	Topic (preliminary)	Units (50 mins/unit)
Prof. Jos é Marcos Alonso Alvarez	University of Oviedo, Spain	Introduction to Lighting Drive Technology	16 (lecture)

Prof. Ouyang Ziwei	Danish Technical University, Denmark	Analysis and Design of Planar Magnetic Components	2 (talk)
Prof. Yam Siwakoki	University of Technology Sydney, Australia	High Step-up Converters Based on Impedance Source Network	2 (talk)
Prof. Carlo Cecati	University of L'Aquila, Italy	A Multi-phase Multilevel Powertrain for Full Electric Aircraft	2 (talk)
Prof. Zonghua Zhang	French Advanced Institute of Telecommunications and Mining, France	Network-oriented Automatic Driving: Key Technologies and Challenges	2 (talk)
Prof. Dianguo Xu	Harbin Institute of Technology, China	Electrical Frontier Technology	1 (talk)
Prof. Liyi Li	Harbin Institute of Technology, China	National Science Project	1 (talk)
Prof. Yong Li	Harbin Institute of Technology, China	Typical applications of micro motors	1 (talk)
Prof. Zhizhong Guo	Harbin Institute of Technology, China	Renewable energy grid	1 (talk)

GROUP RESEARCH PROJECT

The group research project includes student grouping, topic selection, teamwork and acceptance display. Students will be grouped freely. Combined with the content of the summer class, each group may select one of the 6-8 preset topics to conduct research, which will further strengthen students' understanding of lectures and talks, enhance students' awareness of the relevant technologies of electrical engineering discipline, guide students to cultivate their independent innovation ability, and deepen interaction and friendship.

PROGRAM DATES AND TIMES

	Week 1 (6.26—7.2)					Week 2 (7.3—7.9)				
	Mon	Tue	Wed	Thur	Fri	Mon	Tue	Wed	Thur	Fri
M	Opening Ceremony	Seminar				Team Work		Team Work		Closing Ceremony
A		Seminar				Lecture				

CONTACT INFORMATION

Please contact Sun Jiayue at sunjiayue@hit.edu.cn(E-mail).

INTERNATIONAL SUMMER SCHOOL

INTELLIGENT CIVIL ENGINEERING AND INTELLIGENT CONSTRUCTION

Jun 26th – Jul 9th, 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

The development of information technology and artificial intelligence (AI) endows civil engineering with a new connotation. Traditional civil engineering is developing toward an advanced orientation characterized by big data and AI. Supporting the transformation and upgrading of the infrastructure has become a remarkable national demand by implementing big data and AI technology. The in-depth research on significant scientific issues related to intelligent civil engineering could contribute to solve the problems of human survival and development.

Therefore, due to the focus on the original theories and key technologies of civil engineering, the following topics will be involved in this summer school:

- (1) Urban and Engineering Structure Resilience Theory
- (2) Implementation of Computer Vision and Deep Learning in Civil Engineering
- (3) Application of Intelligent Materials in Civil Engineering
- (4) Polar and Cold Region Ice Disaster Prevention and Control Theory, Frozen Soil Disaster Prevention and Control Theory

PROGRAM DATES AND TIMES

- All the lectures and classes in the summer school will be given in English

	Week 1							Week 2						
	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun
8:00 - 11:30	Opening ceremony	Class				Seminar	Innovation competition	Class		Lecture	Class	Seminar	Seminar	
14:00 - 17:30	Lecture			Seminar	Lecture		Tour and social activities	Seminar			Lecture		Tour and social activities	Closing ceremony

COURSES AND LECTURES

● Lectures

Lecturer	Institution	Lecturer	Institution
Urs Meier	Swiss Federal Laboratories for Materials Science and Technology/Swiss Federal Institute of Technology in Zurich	LI Jun	Curtin University
Subhamoy Bhattacharya	University of Surrey	Stephen Wu	Institute of Statistical Mathematics/The Graduate University for Advanced Studies
CAI Hubo	Purdue University	LI Jian	University of Kansas
Pingbo Tang	Carnegie Mellon University	FENG Chen	New York University

● Seminars

Speaker	Title	Speaker	Title
SHEN Shizhao	Academician of the Engineering Academy	XIE Lili	Academician of the Engineering Academy
LI Hui	Professor	CHEN Wenli	Professor
WANG Yuyin	Professor	XIAN Guijun	Professor
TANG Liang	Professor	BAO Yuequan	Professor
HUANG Yong	Professor		

ATTENDANCE REQUIREMENT

We plan to recruit about 10 outstanding undergraduates from overseas universities

● REQUIREMENT:

- Civil engineering or related science or engineering majors
- Sophomore or above

CONTACT INFORMATION

Please contact Liu Lumeng at 15636092386@163.com(E-mail).

INTERNATIONAL SUMMER SCHOOL

IMPRINT HARBIN·CITY TRACE - ARCHITECTURAL DESIGN CAMP

Jun 25th – Jul 8th, 2023

Harbin Institute of Technology, Harbin, P.R. China

We hosted the first international summer school “Imprint Harbin·City Trace - Architectural Design Camp” in 2016 for universities at home and abroad, which has achieved good results and response, successfully shaping into a multi-learning platform for cooperation and coordination of multi-specialties and multi-fields, also providing a good opportunity for students from different institutions to take a professional perspective and cognitive perception of Harbin, a historical and cultural city of northern China.

In the summer term of 2023, The 8th International Summer School “Imprint Harbin·City Trace - Architectural Design Camp” of HIT with enthusiasm is looking forward to your participation in the cool and beautiful Harbin!

I. THE THEME OF THE ARCHITECTURAL DESIGN CAMP: IMPRINT HARBIN·CITY TRACE

The international summer school, taking architectural design workshop as the main line, will invite famous professors overseas such as the professors of University College London and Delft University of Technology together with domestic excellent teachers as the design workshop tutors. Regarding the Harbin historic district as the carriers of main courses, this workshop aims at experiencing the glamour of buildings in north Harbin and meanwhile attempting to innovate architectural design under new technologies. At the same time, the workshop can enhance the professional quality and expand the international perspective of students under the lectures of many teachers from international universities.

II. CONTENT OF COURSES

The teaching content of this summer school consists of four sections: teaching courses, lectures, design workshop and research.

The teaching courses part will be given by Professor Herman van Bergeijk from Delft University of Technology in Holland with a total of 16 class hours. And the essence of the modern western architectural history will be explained from seven different subjects.

The lectures part will be reported by four experts and scholars. They are Professor Kang Jian from University College London, Chen Shouheng as the expert of MIT Computation Group and the Chief Architect of SHDT Shouheng Design, Sun Wei who is in charge of China Technical Support and Promotion Center and also the co-founder of Shaper3d, etc.

The design workshop part is made up of 4 Co-designs with different learning needs and themes in various professional levels, and each will be guided by characteristic co-design faculty group.

The research part includes the study of the development of the city and its related factors from the perspective of the architect after deeply experiencing the history, culture, architecture and life of Harbin.

III. SPECIFIC ARRANGEMENTS

Courses	Contents	Teachers	Class Hours	Credits
Teaching course	Special topics on modern western architectural theories	Professor Herman van Bergeijk from Delft University of Technology in Holland	16	1.0

Lecture	Ramble on world architecture	<ul style="list-style-type: none"> ■ Professor Kang Jian from University College London ■ Chen Shouheng, the expert of MIT Computation Group and the Chief Architect of SHDT Shou Heng Building ■ Professor Sam Nelson from University of Cambridge ■ Professor Sun Cheng 	8	0.5
Design	“Heritage reproduction”	Students are grouped to design, and faculty advisors in the team are shown in the following directions.	36	2.0
	“Digital innovation”			
	“Environment simulation”			
	“Open source blocks”			
Research	City Discovery	Expert in Urban Design and Historic Building Conservation	8	0.5

CONTACT INFORMATION

Please contact Liu Ying at liuying01@hit.edu.cn(E-mail).

INTERNATIONAL SUMMER SCHOOL
TALENT TRAINING CAMP FOR INTERNATIONAL ORGANIZATIONS

Jun 26th – Jul 7th, 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

Talent Training Camp for International Organizations, hosted by the School of International Studies of HIT, plans to take the modules of “Courses + Lectures + Practices (practical training)”. The Camp focuses on international relations and the global development, based on the recent and modern interrelationships among countries and supported by professional guidance on international relations and international organizations. The theoretical knowledge imparted and training activities practiced help to promote the students’ basic understanding of the operational mechanism of international organizations and the fundamental principles of international relations, politics and economics, and to develop their language proficiency, cross-cultural communication ability, global governance awareness and critical thinking ability.

ATTENDANCE REQUIREMENTS

Chinese or overseas students of any majors are welcome. Chinese students with English Proficiency Level equivalent to CET 6 or above are preferred.

LECTURES AND TALKS

The training camp invites former UN officials, serving officials of international organizations, scholars, professors and researchers of famous universities in China to deliver related knowledge on international relations and international organizations in short courses, lectures and training activities.

Lecturer/Speaker	Institution	Topic	Unit (50 mins/unit)
Jan Van Maele (Belgium)	University of Leuven, Belgium	Cross-cultural Communication in Engineering Environment	16 (course)

Hans Willmann (Germany)	World Health Organization	Working for WHO	2 (lecture)
Xue Yuxue (China)	United Nations Development Programme (Former staff)	Understanding International Organizations and Displaying Personal Style	2 (lecture)
Liu Zhixian (China)	The Department of International Organizations and Conferences, Ministry of Foreign Affairs (Former)	The CWC and the Role of International Organizations	2 (lecture)
Xu Jin (China)	Chinese Academy of Social Sciences	Understanding International Relations and Broadening International Horizons	2 (lecture)
Niu Zhongjun (China)	China Foreign Affairs University	The International Civil Service	2 (lecture)
Song Yunfu (China)	World Health Organization (former)	Developing National Senses and Expanding International Vision	2 (lecture)
Wang Jiyuan (China)	Permanent Mission of China in Geneva	The International Labour Organization and the Decent Work Agenda	2 (lecture)
Zhou Zhinan (China)	School of International Studies, HIT	Etiquette, Cross-cultural Ability	2 (lecture)
Meng Wenting (China)	(Interned in) UN Headquarters in New York; (Interned in) UN Development Programme Office in China; UNESCO Joint Programme Office	Training Activities: 1. Internship Writing Activity for International Organizations 2. United Nations SDGs (Sustainable Development Goals) Keynote Speech Training Activity 3. Workshop: Experience Sharing on Internship at International Organizations — “How to be an international civil servant”	4 units / training
Song Langrun (China)	(Interned in) Natural Sciences Sector, UNESCO Regional Office for Eastern Africa		
Zhang Naiqian (China)	(Interned in) the Strategic Planning Department at ITU headquarters in Geneva		
Su Chang (China)	(Interned in) UN Headquarters in New York		
Gao Xuan (China)	(Served at) UN Global Service Centre in Italy		

GROUP PROJECT PRESENTATION

More than 8 groups, each group of 5-6 members. Team members cooperate and complete the team project in English presentation. The presentation includes but is not limited to the knowledge learned about international relations, international organizations and cross-cultural communications.

PROGRAM DATES AND TIMES

	Week 1 (6.26-7.2)							Week 2 (7.3-7.7)				
	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.
M	Register	Lecture	Lecture	Lecture	Lecture	Experiential learning		Training Activity 1	Training Activity 2	Training Activity 3	Training Activity 4	Departure
A	Register	Course	Course	Course	Course	Experiential learning		Course	Lecture	Lecture	Team Project Presentation	Departure

CONTACT INFORMATION

Wang Yang: wangsusanhit@126.com
Xu Rui: 549560770@qq.com
Yu Danyang: yudanyang@hit.edu.cn

INTERNATIONAL SUMMER SCHOOL

ARCTIC ENVIRONMENT AND ECOSYSTEM-SENTINEL OF GLOBAL CLIMATE

CHANGE

26 June-09 July 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

Once in the environment, POPs and CEACs disperse into air, water, soils and sediments in the Arctic, and can be taken up by Arctic biota. Many of the processes that determine the environmental fate of POPs and CEACs and their potential for uptake and bioaccumulation in food webs can be influenced by climate change. As young generations and future elites in different disciplines and fields from China and the eight Arctic countries, our goals on the Arctic are to understand, protect, develop and participate in the governance of the Arctic. To understand human health in the Arctic is the important step to reach the goal.

ATTENDANCE REQUIREMENTS

This Summer School invites undergraduate students from universities worldwide who love and care the Arctic and intend to achieve relevant scientific knowledge of the Arctic. This program is open to undergraduate students of all academic backgrounds. The student is motivated to enhance understanding and friendship among the students from different countries. The students must have enough knowledge of English, both oral and written, for academic studies.

COURSES AND LECTURES

The summer school offers three lectures and ten seminars. Lecturers and speakers are invited from top institutions in Russia, Norway, Canada and China, including North-Eastern Federal University, Norwegian University of Life Sciences, Environment & Climate Change Canada, Harbin Institute of Technology, Tianjin

University, Chinese Research Academy of Environmental Sciences, Research Center for Eco-Environmental Sciences, and Xiamen University.

Lecturer/ Speaker	Institution	Topic (preliminary)	Unit (50 mins/unit)
Prof. Roland Kallenborn	Norwegian University of Life Sciences, Norway	Local sources of contaminants in Arctic Environment	10 (lecture)
Prof. Derek Muir	Environment & Climate Change Canada	Legacy and emerging contaminants in the Arctic	10 (lecture)
Prof. Yifan Li	Harbin Institute of Technology, China	Contaminants in Arctic Environment due to long-range transport	4 (lecture)
Prof. Anatoly N. Nikolaev	North-Eastern Federal University, Russia	Introduction to Arctic ecosystems	4(talk)
Prof. Minggang Cai	Xiamen University, China	Organic pollutants in the changing environments: From the North Pacific to the Arctic	4(talk)
Prof. Pingqing Fu	Tianjin University, China	Sources and molecular composition of organic aerosols in the polar regions	4(talk)
Prof. Qinghua Zhang	Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, China	Persistent organic pollutants in polar regions: occurrence, variations, sources and bioaccumulation	4(talk)
Prof. Fengchun Zhang	Chinese Research Academy of Environmental Sciences	Introduction to biodiversity in the Arctic	4(talk)
Prof. Qingchao Xu	China Institute for Innovation & Development Strategy, Chinese Academy of Sciences, China	China in the Arctic: the Past, the Present and the Future	4(talk)
Prof. Jiannan Wang	Arctic human observer, China	Some thoughts inspired by documentary images and human observation from more than 180 Arctic settlements	2(talk)
Prof. Defeng Xing	Harbin Institute of Technology, Chin	Polar microbial ecosystem and anaerobic biotechnology	2(talk)
Prof. Liyan Liu	Harbin Institute of Technology, Chin	Indoor environment and human health in cold regions	2(talk)

GROUP RESEARCH PROJECTS

Participants will be grouped into 6 teams or more, each with 7-10 members, to work on a project on Arctic air pollution, Arctic water pollution and Ecological Environment. Each group needs to have group discussions and to give group presentations.

PROGRAM DATES AND TIMES

	6.26	6.27	6.28	6.29	6.30	7.1	7.2
Morning	Opening ceremony	Lecture	Lecture	Lecture	Lecture	Seminar	Free activities
Afternoon	Lecture	Talk	Talk	Talk	Talk	Visit	
	7.3	7.4	7.5	7.6	7.7	7.8	7.9
Morning	Lecture	Lecture	Lecture	Talk	Seminar	Ecological investigation	Leaving school
Afternoon	Talk	Talk	Talk	Seminar	Group report		

CONTACT INFORMATION

Please contact Liu Liyan at IAS_HIT@163.com(E-mail).

INTERNATIONAL SUMMER SCHOOL

NEW MEDICAL SCIENCE AND TECHNOLOGY LEADS THE HEALTHY FUTURE

Jun 26th – Jul 7th, 2023

Harbin Institute of Technology, Harbin, P.R. China

GENERAL INFORMATION

The theme of this international summer school is “New Medical Science and Technology Leading the Future of Health”, mainly starting from the acquisition, processing, mining and analysis of big national demand technologies such as omics biological big data. Students understand the cutting-edge development direction and trend of the new medical field, deepen their understanding of the application of engineering algorithms, equipment, and technology in processing biomedical big data, and deeply understand the frontier and necessity of the intersection of medicine and engineering for the development of biology, basic medicine, and clinical medicine. It aims to cultivate undergraduates’ interests in applying engineering theories and methods in the field of biomedicine.

ATTENDANCE REQUIREMENTS

Undergraduate or graduate attendees with background in Biomedical Engineering, Bioinformatics, Computer Science and Technology, Information & Communication Engineering, applied mathematics, etc. are welcomed. All participants must have a good command of English. Some lectures will be given in Chinese with translation in English.

LECTURES AND TALKS

The summer school offers one lecture and eight seminars. Lecturers and speakers are invited from top institutions in the world, including Michigan State University, University of Alcalá, National University of Singapore, Harbin Institute of Technology, University of Tokyo, University of Nottingham Malaysia, and King Abdullah University of Science and Technology.

Module	Topic (preliminary)	Lecturer/Speaker Institution	Units (60 mins/unit)	Credit
Seminar	Soft bioelectronics as precision neural interface	Jinxing Li Michigan State University	2	1
	Micro/nanorobotics: from locomotion to biomedical applications.	Jinxing Li Michigan State University	2	
	Micromotors for bio sensing	Beatriz Jurado Sánchez University of Alcalá Spain	2	
	Current technologies for nucleic acids delivery	Qianqian Ni National University of Singapore	2	
	Cancer theranostics	Xiaoyuan Chen National University of Singapore	2	
	Digital medical health management theories and methods	Douglas Rudy Vogel HIT	2	
	Structural biology and food science	Masaru TANOKURA University of Tokyo	2	
	Design and implementation of medical Robot	Zhiyuan Chen University of Nottingham Malaysia	2	
Lecture	Protein science: from sequence to structure to function	Gao xin King Abdullah University of Science and Technology	20	1
Innovative Practice	Biomedical engineering innovative design		24	1.5
Total			60	3.5

GROUP RESEARCH PROJECT

Participants will be grouped into 5 teams or more, to work on a project on Biomedical Engineering Innovative Design. Each group may select one from specified areas and instructors are available online or offline.

CONTACT INFORMATION

Please contact Song Shanshan at songshanshan@hit.edu.cn(E-mail).