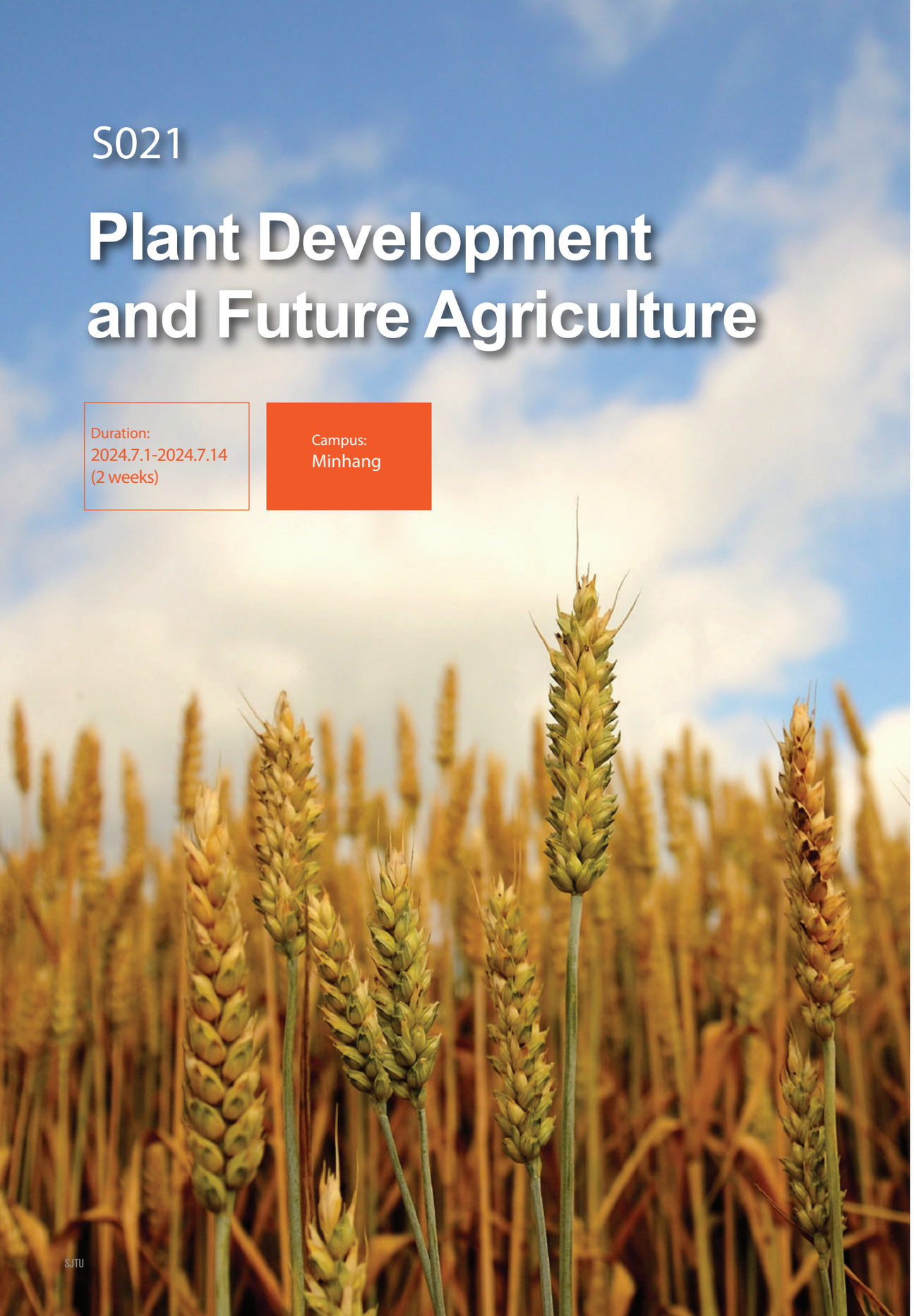
S021

Plant Development and Future Agriculture

Duration:
2024.7.1-2024.7.14
(2 weeks)

Campus:
Minhang



Course Description »

This course will focus on key national issues and demands in food security and the seed industry. It is centered on the critical areas of innovation within the seed industry, providing students with in-depth lectures on issues at the forefront of plant cell development. Students will have the opportunity to explore the mechanisms behind plant growth, development, and environmental adaptation. They will delve into subjects such as plant genomics, the role of growth hormones, photosynthesis, and plant adaptability. By grasping the fundamental principles of plant growth, students will be able to contribute to the future of agriculture and breeding, and be better equipped to address addressing significant challenges in food security, climate change, and sustainability.

Highlight »

> Outstanding students participating in this Summer School course will have the opportunity to receive scholarships of up to 2500 RMB.

> The program will feature lectures by 3-4 eminent international academic experts from top agricultural research institutions such as the John Innes Centre, the Max Planck Institute, and Wageningen University in the Netherlands.

> Two tours of the SJTU Wine Center & Grapes Planting Base and the Chenshan Botanical Garden.

> Tours of the Pujiang Green Valley Base, the Shanghai Yangtze River Delta Eco-Environmental Change and Management Observation and Research Station, and Lankuaikei Technology Enterprise.

Instructors »

Professor George Coupland
Email: coupland@mpipz.mpg.de

Since 2001, Professor Dr. George Coupland has served as the director and Scientific Member of the Max Planck Institute for Plant Breeding Research. On May 1st, 2012, he was elected as a foreign associate of the National Academy of Sciences (USA). He graduated with first class honours in microbiology from the University of Glasgow in 1981, and completed his PhD in molecular biology at the University of Edinburgh in 1984. He did his postdoctoral fellowship at the University of Cologne from 1985-1988, and subsequently became the Research Group Leader at the Plant Breeding Institute in Cambridge (1989-1990), and the Research Group Leader at the John Innes Centre in Norwich (1990-2001). His group focuses on reproductive development and the evolution of perennial life history.

Professor Hugues Renault

Hugues Renault is a professor at the Institute of Plant Molecular Biology (Institut de Biologie Moléculaire des Plantes, France). He obtained his PhD from the University of Paris-Sud and pursued his postdoctoral research at the institute. His research primarily focuses on molecular plant biology, particularly in plant gene expression regulation, plant signal transduction, and plant stress resistance.

Associate Professor Sian Bray
Email: Sian.Bray@nottingham.ac.uk

Sian Bray is an assistant professor of Bioinformatics, Faculty of Medicine & Health Sciences, University of Nottingham. Her work focuses on the evolutionary genomics underlying adaptation. She has a range of skills including 'dry-lab' bioinformatic and programming skills as well as 'wet-lab' biochemistry and structural biology skills. Most recently her work has focused on genome-wide scans for selection and extensive GWAS analyses.

Associate Professor Guozhang WU
Email: gzwu@sjtu.edu.cn

Dr. Guozhang WU is a Tenure Track Associate Professor in the School of Agriculture and Biology, Shanghai Jiao Tong University. He received a Ph.D. from the Chiense Academy of Sciences' Shanghai Institute of Plant Physiology and Ecology, and did postdoctoral work at the Max Planck Institute of Molecular Plant Physiology. His group thinks plastids (chloroplasts) are essential organelles that harbor photosynthesis and the biosynthesis of various primary and secondary metabolites, and act as environmental sensors which participate in multiple stress response. His team uses state-of-the-art techniques in the lab to understand: 1.Bidirectional communication between plastids and the nucleus (anterograde and retrograde signaling). 2. Plastid protein import and the cellular response to protein import stress, and the regulation of plastid protein homeostasis. 3. The role of plastids in abiotic stress, especially temperature stress.

Associate Professor Hongbo GAO
Email: hongbo.gao@sjtu.edu.cn

Dr. Hongbo GAO is a Tenure Track Associate Professor in the School of Agriculture and Biology, Shanghai Jiao Tong University. He received a Ph.D. in the Science of Plant Physiology and Ecology, SIBS, of the Chinese Academy of Sciences, and did his postdoctoral work at the John Innes Centre. His research group is interested in the applications of single-cell and single-cell-type isolation, sequencing, and multi-omics studies in plant research. Basing on these tools, Dr. Gao's group focuses on three topics: 1. Developing new single-cell sequencing methods and setting up single-cell platforms on horticultural crops. 2. Studying novel regulatory mechanisms involved in recombination and transcription during meiosis. 3. Studying the mechanism and function of epigenetic reprogramming during development and cell identity specification.

Associate Professor Ruohe YIN
Email: ruohe.yin@sjtu.edu.cn

Dr. Ruohe Yin is an Associate Professor in the Department of Plant Science, School of Agriculture and Biology, SJTU. He is a recipient of the prestigious National 1000 Young Talents Program and Shanghai Pujiang Talent Plan. He uses Tomato and Arabidopsis Thaliana as model plants in the lab, applying various approaches to unravel UV-B light signal transduction pathways extending from the photoreceptor to signaling cascades and target genes and proteins important for metabolic homeostasis, plant shape, and architecture determination.

Associate Professor Yingnan HOU
Email: yingnanh@sjtu.edu.cn

Dr. Yingnan HOU is an Associate Professor in the Department of Plant Science, School of Agriculture and Biology, SJTU. He received a Ph.D. in Peking University. He served as an assistant project scientist at UC Riverside, California, US. He interests include the epigenetic regulation of plant immunity; trans-species movement of molecules between plants and microbes; and the impacts of environmental changes to plant-microbe interactions.

Assessment

Attendance: 25%
Participation in discussion: 25%
Essay and report: 50%

Contact

Program Director: Professor Hongbo GAO
(hongbo.gao@sjtu.edu.cn)
Program Coordinator: Ms. Yuxuan HAO
(haoyuxuan@sjtu.edu.cn)

→ Visa

SJTU will provide students with electronic JW 202 and admission notice. Applicants should bring the visa paperwork, admission notice, JW 202 form and a valid passport to the local Chinese embassy or consulate to apply for a short-term student visa (usually visa type "X2"). Students from visa-waiver-country shall also hold a valid student visa (X2 type visa) for entry. Those who are already in China need to submit a copy of the visa page, residence registration notice, and all of the above application documents to the PCB in Shanghai after registering at SJTU.

The JW 202 form and the admission notice will be sent to the applicant via an email within two weeks after May 30, 2024.

* If you are a local student from Hong Kong, Macao or Taiwan, you do not need the JW202 form.

→ Insurance

Students who plan to attend this program should obtain insurance before studying in China. Each student must present the insurance certificate to the administrative staff on the day of registration.

→ Important Dates

Duration: 2024.7.1-2024.7.14

Application Deadline: 2024.6.10

→ Certificate

An official certificate will be issued to the student who completes the course by the School.

→ Application Link and Contact

https://www.wjx.cn/vm/hTSuMog.aspx#

Email: haoyuxuan@sjtu.edu.cn

2024 SJTU GLOBAL SUMMER SCHOOL

TIME	MON.	TUE.	WED.	THU.	TRI.	WEEKEND
AM	Registration	Plant hormones, developmental regulation, and high yield breeding（class）	Plant hormones, developmental regulation, and high yield breeding（class）	Organelle structure, function, and high photosynthetic capacity breeding（class）	Organelle structure, function, and high photosynthetic capacity breeding（class）	Free Activity
PM	Opening Ceremony	Chenshan Botanical Garden（visit）	Chinese Culture	Pujiang Green Valley Base（visit）	Chinese Culture	
TIME	MON.	TUE.	WED.	THU.	TRI.	WEEKEND
AM	Plant-environment interaction and high stress-tolerance breeding（class）	Plant-environment interaction and high stress-tolerance breeding（class）	Metabolism, synthetic biology, and high nutrition breeding（class）	Metabolism, synthetic biology, and high nutrition breeding（class）	Culture Activity	Return
PM	Lankuaikei Technology Enterprise（visit）	Chinese Culture	SJTU Wine center & Grapes Planting Base（visit）	Chinese Culture		