



UNESCO/IOC-ODC Training Course on Ocean Dynamics and Ocean Models



PROGRAMME

1-11 September 2026

Qingdao, China

Hosted by
**The First Institute of Oceanography (FIO),
Ministry of Natural Resources (MNR), China
Ocean Decade International Cooperation Center**



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1. Background

The UNESCO/IOC Regional Training and Research Center on Ocean Dynamics and Climate (ODC) was officially established under the Agreement signed by the Intergovernmental Oceanographic Commission (IOC) of UNESCO and the host institute, the First Institute of Oceanography (FIO), Ministry of Natural Resources (MNR) of China, at WESTPAC-VIII in Bali, Indonesia, in May 2010. ODC center was established to provide advanced training and education for young scientists and officers, promote exchanges among experts within and outside the WESTPAC region on ocean research, and initiate cutting-edge research on ocean and climate model development. ODC center was inaugurated on 9 June 2011 at the host institute, the First Institute of Oceanography, China, as the first UNESCO/IOC Regional Training and Research Center. Furthermore, the cooperation agreements with a work plan have been renewed through the exchange of letters every five years.

ODC center has been providing annual training and research opportunities in ocean dynamics, air-sea interactions, climate change and numerical modeling for junior scientists and doctoral/master's students. Financial support is provided to about 15 trainees mainly from the developing member states of the IOC. ODC center also provides support on high-performance computing, data processing and numerical modeling during the training course and joint research activities.

Fourteen training courses have been successfully held annually in the last 15 years with the subjects of Ocean Models (10-16 June 2011), Ocean Dynamics (16-22 July 2012), Air-Sea Interaction and Modeling (12-23 August 2013), Climate Models (3-14 November 2014), Climate Change (7-18 September 2015), Ocean Dynamics and Multi-scales Interaction (5-16 September 2016), Development of Coupled Regional Ocean Models (12-23 June 2017), Ocean Forecast System (25 June-7 July 2018) and Climate Dynamics and Air-Sea Interactions (17-28 June 2019), Regional Application of Coupled Climate Models (5-16 July 2021) and Prediction and Projection of Climate (22-28 August 2022), Ocean Model and Data Assimilation (10-21 July 2023), Ocean Model and Ecosystem Model (8-20 July 2024), Application of Ocean Forecast System (1-12 September 2025). A total of 785 trainees from 56 countries have been selected from 1,600 applications from 71 countries, and trained through these previous courses. More information can be found on ODC website (<http://odc.fio.com.cn>).

The training will be jointly organized with the "South Asia Marine Disaster Prevention and Mitigation Capacity Building Cooperation" project this year and will include additional ocean literacy themed activities. Based on the constructive suggestions and overwhelming interest received from the previous training courses, the topic of the 15th ODC Training Course has been set as Ocean Dynamics and Ocean Models, and the course will be held from 1 to 11 September, 2026. This training is designed to introduce new-generation ocean-to-climate coupled models and their applications, the use of ocean forecasting in the monitoring and assessment of the health of the marine environment ecosystem, application and practice of the toolkit, data and statistical analysis, the transport of plastic pollution in the ocean and its assessment, end-to-end operational oceanographic systems for societal services, and other related frontier topics.

1.1 Place for Training

The opening ceremony and lectures for this two-week training will be held in the meeting room 302 on the 3rd floor of the Administrative Building, in the First Institute of Oceanography (FIO), Ministry of Natural Resources, China (自然资源部第一海洋研究所). (see Figure 1). Address: No. 6 Xianxialing Road, Laoshan District, Qingdao (青岛市崂山区仙霞岭路 6 号)

Trainees will be accommodated at Hitide International Hotel (海泰万丰国际酒店, Address: No. 175 Shenzhen Road, Laoshan District, Qingdao, China, 青岛市崂山区深圳路 175 号; Room reservation: +86-532-57792088) which is about a 15-minutes walk to FIO. (see Figure 2).



Fig. 1 The training venue at FIO



Fig. 2 The Hitide International Hotel

1.2 Co-Sponsors



中华人民共和国自然资源部
Ministry of Natural Resources of the People's Republic of China



“海洋十年”国际合作中心
OCEAN DECADE COOPERATION CENTER

1.3 Local Organizers, Resource Persons and Volunteers

Local Organizers & Resource Persons

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2. Program of UNESCO/IOC-ODC Training Course

2.1 Time Schedule

15th UNESCO/IOC-ODC Training Course on Ocean Dynamics and Ocean Models

(Time Zone, GMT+08:00)

Time	Activities	Speaker/Chair
Tuesday 1 September 2026		
8:30-9:00	Registration	
9:00-09:50	Opening Ceremony	Chaired by Yafeng Yang
	Opening remarks from FIO.	Zhenya Song
	Opening remarks from ODC Center.	Fangli Qiao
	Speech from lecturer representative.	Joseph Kojo Ansong
	Introduction to the 2026 ODC training course.	Xunqiang Yin
09:50-10:10	Group photos and break	
10:10-10:25	Frontier Lectures: Breaking Barriers, Building Bridges: How Open Science Empowers Early-Career Researchers	Haiyan Sun
10:25-10:40	Frontier Lectures: Cracking the publishing code, Insight from Elsevier Oceanography journals	Xiang Lian
10:40-12:00	Training Lecture: New generation ocean to climate coupled models and their applications.	Fangli Qiao
12:00-14:00	Lunch	
14:00-14:30	Frontier Lectures: From Simulations to Stories: Your Role in Ocean Literacy	Bernardo Reduto Leal
14:30-16:00	Frontier Lectures: How Do We Rethink the Earth? Rethinking Our Place on an Ocean Planet?	Shweta Naik
16:00-16:10	Health break	
16:10-16:40	Group Discussion 1: Brain storm for the proposal	All trainees and teachers
16:40-17:10	Buffet Reception	All trainees and teachers
Wednesday 2 September 2026		
9:00-10:20	Training Lecture & Practice: Wave-turbulence interaction -induced vertical mixing and its effects in ocean and climate models.	Dejun Dai
10:20-10:40	Health break	
10:40-11:10	Training Lecture & Practice: Wave-turbulence interaction -induced vertical mixing and its effects in ocean and climate models.	Dejun Dai
11:10-12:00	Frontier Lectures:	Linlin Zhao

	Global Marine Governance under the Background of the BBNJ Agreement.	
12:00-14:00	Lunch	
14:00-15:40	Training Lecture & Practice: Application and practice of the Toolkits.	Jiechen Zhao
15:40-16:00	Health break	
16:00-17:00	Trainee report: Trainees in group 1	All trainees and teachers
Thursday 3 September 2026		
9:00-12:00	Special Activities: Engagement in International Organizations: SeaForAll as an example.	All trainees and teachers
12:00-14:00	Lunch	
14:00-17:00	Special Activities: Deepening Ocean Literacy, Building a Dream for a Blue Future.—UN Ocean Decade International Conference on Ocean Literacy.	All trainees and teachers
Friday 4 September 2026		
9:00-17:00	Special Activities: Approaching the Ocean, Feeling the Deep Blue—UN Ocean Decade International Conference on Ocean Literacy.	All trainees and teachers
Monday 7 September 2026		
9:00-10:20	Frontier Lectures: 21st Century projection of tropical climate variability.	Agus Santoso
10:20-10:40	Health break	
10:40-12:00	Training Lecture & Practice: Automatic simulation system for marine environment.	Wanqing Chi
12:00-14:00	Lunch	
14:00-15:00	Training Lecture & Practice: Automatic simulation system for marine environment.	Wanqing Chi
15:00-15:20	Health break	
15:20-17:00	Trainee report: Trainees in group 2 & 3	All trainees and teachers
Tuesday 8 September 2026		
9:00-10:20	Training Lecture & Practice: Data Assimilation Methods Based on Deep Representation Learning for Fusing Multi-Source Heterogeneous Observations.	Yanfei Xiang
10:20-10:40	Health break	
10:40-12:00	Training Lecture & Practice: Data Assimilation Methods Based on Deep Representation Learning for Fusing Multi-Source Heterogeneous Observations.	Yanfei Xiang
12:00-14:00	Lunch	
14:00-15:40	Training Practice: Data Assimilation Methods Based on Deep Representation Learning for Fusing Multi-Source Heterogeneous	Yanfei Xiang

	Observations.	
15:40-16:00	Health break	
16:00-17:00	Trainee report: Trainees in group 4	All trainees and teachers
Wednesday 9 September 2026		
9:00-10:20	Training Lecture & Practice: An introduction to operational ocean forecasting.	Joseph Kojo Ansong
10:20-10:40	Health break	
10:40-12:00	Training Lecture & Practice: An introduction to operational ocean forecasting.	Joseph Kojo Ansong
12:00-14:00	Lunch	
14:00-15:40	Training Lecture & Practice: An introduction to operational ocean forecasting.	Joseph Kojo Ansong
15:40-16:00	Health break	
16:00-17:00	Trainee report: Trainees in group 5	All trainees and teachers
Thursday 10 September 2026		
9:00-12:00	Training Lecture & Practice: Introduction to Regional Ocean Modeling with CROCO: Theory and Hands-on Practice.	K M Azam Chowdhury
10:20-10:40	Health break	
10:40-12:00	Training Lecture & Practice: Introduction to Regional Ocean Modeling with CROCO: Theory and Hands-on Practice.	K M Azam Chowdhury
12:00-14:00	Lunch	
14:00-15:40	Training Lecture & Practice: Introduction to Regional Ocean Modeling with CROCO: Theory and Hands-on Practice.	K M Azam Chowdhury
15:40-16:00	Health break	
16:00-17:00	Trainee report: Trainees in group 6	All trainees and teachers
Friday 11 September 2026		
9:00-10:30	Group Reports: Report progress of the proposal	All trainees and teachers
10:30-11:00	Health break	
11:00-12:00	Completion Ceremony	

2.2 Lecturers

Lecturers (By order of teaching)

Dr. Haiyan Sun

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Dr. K M Azam Chowdhury

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3. Other Activities

3.1 Trainee Reports

This activity is designed to help the trainees establish research networks, and identify possible areas of cooperation in the future. Before the course, all participants are required to prepare a 6-minute presentation, including an introduction to your work and study related to this course. There will be trainee report sessions for you to deliver the presentation. If you haven't finalized the introduction, you are encouraged to prepare and send it to odc_center@fio.org.cn as soon as possible. The order of these reports will be announced during the training course.

3.2 Group Discussion and Reports

Trainees will be divided into 6 groups with a group leader selected from each group. Their task is to help the respective group members organize group discussions and to accumulate group reports.

The trainees in each group will be working together in this period. Each group is encouraged to find a research topic which is relevant to the theme of the training course and then start to develop a proposal for the two weeks. A **draft proposal** for new research is required to be presented on the Group report session to give the proposal presentation.

3.3 Trainee Certificates and Awards

The performance of trainees will be evaluated during the training courses, and a score will be given to each trainee. The score is determined by attendance, motivation, activity performance in class, discussions, quality of homework, trainee reports and group reports.

Best Trainee Award: In order to encourage trainees to deep participate in the activities during this two weeks, 2-3 trainees who perform well during the training and generate the trainee report and group reports in good quality will be rewarded with a certificate. Trainees who obtain this award will be considered for the financial supports in the next training course with high priority.

4. Useful Information

4.1 Platforms

A **WeChat** group had been set up for easy communications for onsite trainees. If you have the WeChat in your cell phone, please scan the following figure and join the group. This figure is only valid for 2 weeks and it will be updated on ODC website. If you can't join the WeChat group through the figure, please open the ODC website to find the newest one.



All the schedule, data, ppts, archived recordings(By **Tecent meeting**) are available via the ODC website. https://odc.fio.com.cn/a/RESOURCES/ODC_Training_Course/

4.2 Weather in Qingdao

September is crisp and clear in Qingdao, making it a relatively cool month. You can wear a T-shirt during the daylight. During the daytime, you can wear a T-shirt or a thin long-sleeved top. However, the weather is a bit cool in the early morning and evening. It is better to bring a thin coat with you, especially when you go to the seaside or outside. The temperature and rainfall are listed in the following table for your reference. More information could be also found on the internet and you are encouraged to check it before your coming.

Month	Average High Temperature		Average Low Temperature		Average Temperature		Average Rainfall	
September	77.5°F	25.3°C	66.0°F	19°C	71.6°F	22°C	61.5mm	11 days

4.3 Currency and ATM in Qingdao

The official currency of China is Renminbi (RMB, CNY). Other foreign currencies are generally not accepted in markets, shops, restaurants, or taxis. As of 2026, Visa, MasterCard, American Express, JCB, Diners Club, Discover and other major international cards are accepted at over 5,300 key merchants across the city, covering major shopping malls, hotels, restaurants, and transport hubs; however, small local shops and street vendors may remain cash-only.

Currency exchange services are available at Qingdao Jiaodong International Airport (the city's sole international airport since August 2021), where 6 self-service exchange machines and 3 staffed counters operate during all international flight hours and support 8 foreign currencies. Across the city, over 1,000 exchange outlets are in operation, including major bank branches (notably Bank of China) and licensed exchange operators. USD and Euro are the most readily exchangeable currencies. For cash withdrawal, approximately 2,400 ATMs operated by 18 major banks support international cards as of 2026, most offering English-language interfaces. Bank of China, ICBC, Construction Bank, and Agricultural Bank ATMs generally accept Visa, Mastercard, JCB, and American Express, though compatibility may still vary by individual machine and card issuer; a backup card is advisable. Per-withdrawal limits are typically capped at RMB 3,000.

Mobile payment is widely accepted and is the most convenient option for daily transactions. Both Alipay and WeChat Pay support binding international cards (Visa, Mastercard, American Express, JCB, Discover, Diners Club) after passport-based real-name verification. Hisense Plaza additionally supports Alipay+, enabling payment via compatible foreign e-wallets. We advise exchanging a small amount of RMB before departure for immediate expenses, and setting up Alipay or WeChat Pay prior to arrival for the broadest acceptance. If exchanging cash in Qingdao, USD or Euro is recommended.

4.4 Medical services

The Laoshan Campus of the Affiliated Hospital of Qingdao University is located at No. 59, Haier Road, Laoshan District, Qingdao City, Shandong Province, adjacent to the First Institute of Oceanography, Ministry of Natural Resources and Hitide International Hotel. If any problems, please call 0532-82913225. Service hours: 7:30am -12:00am; 1:30pm - 5:00pm

4.5 Electricity

In China the standard voltage is 220 V and the frequency is 50 Hz, and the common type of power socket is shown on the right. Some outlets accept US and European style plugs, but you may also consider to bring a power plug adapter.



4.6 Useful Numbers

Some useful numbers are provided to you if any emergency issues. Police number is **110**; Fire Number is **119**; Ambulance Number is **120**. Local telephone numbers: country code (+86), area code (532), telephone number (8 digits)

4.7 Internet connection

All Google applications (Gmail, Google Drive etc.), some social media tools (Facebook, X, Instagram, Youtube, etc.) and applications like Dropbox, are not accessible in China without a Virtual Private Network (VPN).

4.8 Tips

In China it is not customary to tip restaurant waiters, taxi drivers or hotel.



Welcome to join the training courses!



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ODC website: <https://odc.fio.com.cn>

