

*International Training Centre for Operational Oceanography (ITCOcean)  
Indian National Centre for Ocean Information Services (INCOIS)  
Hyderabad, India*

**Background :**

- In response to ‘The Ocean Call’ from Intergovernmental Oceanographic Commission (IOC)/UNESCO in June 2010 to its Member States for contributions towards the IOC’s efforts on capacity building, Ministry of Earth Sciences (MoES), Government of India decided to establish an **International Training Centre for Operational Oceanography (ITCOcean)** at the Earth System Science Organisation-Indian National Centre for Ocean Information Services (ESSO-INCOIS), Hyderabad.
- Subsequently, on 4<sup>th</sup> July 2013, MoES signed a Memorandum of Agreement (MoA) with IOC/UNESCO to cooperate in the capacity development activities by organizing joint training programmes, especially in operational oceanography, for the benefit of African and IOR countries.

**Objective:**

- The Centre aims at promoting the development and optimization of scientific base, technology and information system for operational oceanography at national, regional and global levels.
- To provide advanced training in Operational Oceanography for young researchers and scientists, technical persons and decision makers/officials from the IOR countries on a regular basis, to enable to create a large pool of skilled manpower.
- To conduct short (1-2 weeks) and long (4-10 weeks) courses under various themes in Operational Oceanography.

**Achievements :**

- During July 2013-January 2016, ITCOcean has conducted 17 Courses - 8 International and 9 National and trained 490 trainees from India and 73 from 23 countries (Australia, Bangladesh, Belgium, Comoros, Ghana, Iran, Indonesia, Italy, Kenya, Madagascar, Maldives, Malaysia, Mauritius, Mozambique, Nigeria, Oman, Romania, Seychelles, South Africa, Sri Lanka, Tanzania, Togo, Yemen).

**(Please visit [www.incois.gov.in/portal/ITCOcean/Courses\\_Conducted.jsp](http://www.incois.gov.in/portal/ITCOcean/Courses_Conducted.jsp) for more details).**

- **In April 2015, ITCOcean was also recognized as the Regional Training Centre (RTC) of Ocean Teacher Global Academy (OTGA) of the IOC/IODE to offer training in Operational Oceanography for the benefit of Indian Ocean Rim countries.**
- A state-of-art 48 seat E-class room has been made operational with the facility to link multiple class rooms, organizations and participants across the globe, making it a truly global class room.
- The civil construction work related to academic and residential buildings (hostels) is in progress and expected to be completed by July 2017.

**POINT OF CONTACT AT NICOIS**

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### Courses organized in 2013

Sl. No	Course Name (Period)	Organized by	Participants	Faculty
1	International Training Course on 'Fundamentals of Ocean Climate Modeling at Global and Regional Scales'. (Aug 5-14, 2013)	ITCOcean and International Centre for Theoretical Physics (ICTP), Italy & CLIVAR	30- including 5 from Indian Ocean Rim Countries (Australia, Belgium, Kenya, Nigeria, Togo).	INCOIS, India, NOAA/GFDL, USA; CSIRO, Australia; ICTP, Italy, CMMACS, India;
2	Ensemble Kalman Filtering - Methods and Algorithms July 15-26, 2013	ITCOcean, INCOIS	30 Participants from India	Prof. S. Lakshmivarahan, School of Computer Science, University of Oklahoma, USA.

### Courses organized in 2014

Sl. No	Course Name (Period)	Organized by	Participants	Faculty
1	'Ocean Colour Remote Sensing - Data, Processing and Applications' (November 10-14, 2014)	ITCOcean and IODE/IOC, UNESCO	28 participants - 20 from India and 8 from 7 foreign countries - Madagascar, Mauritius, Malaysia,	Plymouth Marine Laboratory, NRSC, SAC, IIT (Madras) and

			Bangladesh, Ghana, Romania and Tanzania	INCOIS
2	Remote Sensing of Potential Fishing Zones and Ocean State Forecast (March 24-29, 2014)	ITCOcean, INCOIS	24 participants - 15 from India and 9 from 7 IOR countries South Africa, Italy, Comoros, Madagascar, Mauritius, Bangladesh and Sri Lanka	NRSC, SAC, IIT (Kharagpur), INCOIS
3	Regional Training Course on Standard Operating Procedure for Tsunami Warning and Emergency Response for Northern and Western Indian Ocean Countries (23-27 June 2014)	ITCOcean and ICG/IOTWS/IOC	30 participants (6 from India and 24 Foreign participants from the IOR countries)	ESSO-INCOIS
4	On-Job Training for Operators from Oman Tsunami Warning Centre (4-8 Aug 2014)	ITCOcean, INCOIS	6 officers from Oman Tsunami Warning Centre	ESSO-INCOIS
5	Oceanography for the Scientists of DRDO, Balasore , January 6-10, 2014	ITCOcean, INCOIS	10 officers from DRDO	ESSO-INCOIS
6	Ocean Information Services for Cyclone Forecasters, April 2-3, 2014	ITCOcean, INCOIS	22 Cyclone Forecasters from IMD	ESSO-INCOIS
7	Training Course for the Trainers and Operators on Ocean State Forecast (OSF) Services , Nov. 26-27,2014	ITCOcean, INCOIS	64 participants from IMD, IFFCO, Indian Coast Guard, NGOs'	ESSO-INCOIS
8	Training Course on Ocean Observation Systems and Data Utilization Dec. 3-6, 2014	ITCOcean, INCOIS	18 students of IIT, Bhubaneswar	ESSO-INCOIS

### **Courses organized in 2015-16.**

Sl. No	Course Name (Period)	Organized by	Participants	Faculty
1	International Training Course on 'Biological Oceanographic Processes', May 18-22, 2015	ITCOcean, INCOIS	32 participants - 25 from India and 7 from three foreign countries - Madagascar, South Africa, Sri Lanka	INCOIS, NIO, Goa
2	Training course on Fishery Stock Assessment & Eco system Modeling September 16 - 22,2015	ITCOcean, INCOIS	51 participants from India	The faculty was drawn from (NOAA), USA and (CMFRI), India
3	Short Course on Advanced Statistical Concepts in Atmospheric and Oceanic Sciences Feb. 23-28, 2015	ITCOcean, INCOIS	43 - from INCOIS, IITM, Pune, NCMRWF, Noida, SPL, Trivandrum, CUSAT, Kochi, AU, NRSC	Prof. R Ramesh, Physical Research Laboratory, Ahmedabad
4	An Introduction to the Blue Ocean June 1-12, 2015	ITCOcean, INCOIS	24 - from INCOIS, IIT (Kgp), NRSC, CMFRI, Anna Uni., Behrampur Uni.,	<b>Prof. Raghu Murtugudde</b> , University of Maryland, USA
5	Training course on 'Indian Ocean Dynamics : From the Large-Scale Circulation to Small-Scale Eddies and Fronts' November 16-27, 2015	ITCOcean, INCOIS	45 participants from 14 institutions in India attended the course	<b>Prof. Julian P. McCreary</b> , University of Hawaii, USA, <b>Dr. D Shankar</b> , NIO, Goa
6	Training program on 'Ocean Data Utilization and Ocean Observation System' (Dec. 8-12, 2015)	ITCOcean, INCOIS	15 participants from IIT (Bhubaneswar) and University of Hyderabad	INCOIS
7	International Training course on 'Marine GIS for Operational Oceanography' (Jan. 18-22,2016) <b>RTC COURSE</b>	ITCOcean, INCOIS and IODE-OTGA	20 participants - 13 from Bangladesh, Indonesia, Iran, Kenya, Maldives, Sri Lanka, South Africa, Tanzania and 7 from India	INCOIS, Survey of India, National Remote Sensing Centre (ISRO), Uni of Hyd.

### Forthcoming Courses in 2016

Sl. No	Course Name (Period)	Organized by	Participants	Faculty
1	<b>Training Course on Tides and Tidal Data Analysis June 13-17, 2016</b>	ITCOcean, INCOIS		INCOIS, NIO-Goa, IISc
2	<b>Training Course on Emerging Trends in Ocean Observations and Ocean Data Analysis July 4-15, 2016</b>	ITCOcean, INCOIS and POGO (UK)		INCOIS, IISc, NIO, USA
3	<b>Winter School On Operational Oceanography - Indian Ocean Circulation And Sea Level Variation October 16-21, 2016</b>	<b>INCOIS, Nansen Environmental and Remote Sensing Center (Norway)</b>		INCOIS, Norway
4	<b>Regional Training workshop for multi-hazard early warning systems for members of the WMO/ESCAP Panel on Tropical Cyclones (PTC) and the ESCAP/WMO Typhoon Committee (TC) September 19-23, 2016</b>	<b>UN ESCAP, INCOIS, RSMC/IMD</b>		INCOIS, IMD
5	<b>Discovery and Use of Operational Ocean Data Products and Services October 2016 (RTC Course)</b>	<b>ITCOcean, OTGA/IODE-IOC, Belgium</b>		INCOIS

