



GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCE
INDIA METEOROLOGICAL DEPARTMENT



DETAILS OF TRAININGS
AND
CAPACITY BUILDING INITIATIVES
BY IMD

Details of Trainings and Capacity Building

Initiatives by IMD

IMD plays a pivotal role in capacity building of forecasters not only in India but also in various countries in the South Asia, Southeast Asia and Middle East.

IMD is a WMO recognised Regional Training Centre (RTC). It participates in voluntary co-operation programme and provides training to candidates nominated by the Meteorological Services of countries within the region. As a regional training centre, it organises a training of 4-12 months duration on various disciplines of meteorology including Marine Meteorology, Physical Oceanography and Ocean & Atmosphere Interaction. During last 10 years, IMD Pune has conducted more than 85 training courses for national and international forecasters. Details of these trainings are presented in Table 1.1 to 1.7 and details of the curriculum of these trainings are presented in Annexure 1.

IMD acts as 1 among 6 WMO recognised Regional Specialised Meteorological Centre-Tropical Cyclones, New Delhi. Apart from providing tropical cyclone and storm surge advisories to 13 countries under WMO/ESCAP Panel (Bangladesh, India, Iran Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, UAE and Yemen), RSMC New Delhi also provides annual training to tropical cyclones forecasters in the region on marine weather, tropical cyclones and storm surge monitoring and forecasting. IMD is conducting this training since 2005. Details of these trainings are presented in Table 2 and Schedule of 19th Tropical Cyclones and Storm Surge Forecasters Training is presented in Annexure 2.

IMD also conducts refresher courses in-house regularly to apprise the latest tools and technologies with the forecasters. Details are presented in Table 3.

Details of the trainings are available at RSMC website www.rsmcnewdelhi.imd.go.in

Table 1.1: Training courses with duration ranging from 4months to 12 months with modules in Marine weather.

S.No	Name of the course	Duration	Approximate Number of participants in each batch	Number of batches in a calendar year	Name of the Marine Weather Module
1	Intermediate Training Course/Integrated Meteorological Training Course	4 months	60 -100	3	Marine Meteorology
2	Forecasters Training Course	6 months	50 - 60	2	Physical Oceanography & Ocean Atmosphere interaction
3	Advanced Meteorological Training course	12 months	8-15	1	Oceanography & Marine Meteorology + Physical Oceanography & Ocean-Atmosphere interaction
4	Trainee Meteorologist Gr-II course	12 months	10-20	1	Oceanography & Marine Meteorology + Physical Oceanography & Ocean-Atmosphere interaction

Above training service delivery is in place beyond 2000. Course Contents of the module, as mentioned in the last column is given in a consolidated form in Annexure 1.

Table 1.2 Details of Advanced Meteorological Training Course (AMTC)

Batch No.	Duration	Total No. of Trainees	Indian Navy	Coast Guard	Other Institutes	Foreigners With country
162	10.09.2001-06.09.2002	07	02	01	03 (IITM)	01 (Maldives)
163	09.09.2002-05.09.2003	09	05	-	01 (IITM)	03 (Ethiopia)
164	08.09.2003 – 10.09.2004	06	05	-	01 (IITM)	-
165	13.09.2004 – 09.09.2005	09	05	-	01 (IITM)	03(Kenya-01, Malaysia 01, Ethiopia 01)
166	12.09.2005 – 08.09.2006	07	03	-	01 (IITM)	03 (Lesotho 02, Maldives 01)
167	11.09.2006 - 07.09.2007	07	02	-	-	05(Lesotho 04, Maldives 01)
168	10.09.2007 - 05.09.2008	08	03	01	-	04 (Mauritius 03, Vanuatu 01)
169	08.09.2008 - 04.09.2009	08	03	01	-	04 (Papua New Guinea 01, Maldives 02, Mauritius 01)
170	07.09.2009 - 03.09.2010	03	03	-	-	-

171	13.09.2010 - 09.09.2011	06	04	01	-	01 (Maldives)
172	12.09.2011 - 07.09.2012	08	08	-	-	-
173	10.09.2012 – 06.09.2013	11	09	01	-	01(Mauritius)
174	10.09.2013 - 05.09.2014	10	09	01	-	-
175	08.09.2014 – 11.09.2015	10	08	01	-	01(Mauritius)
176	09.09.2015 – 03.09.2016	08	07(3F+4M)	-	-	01 (Fiji) (1F)
177	14.09.2016 - 08.09.2017	09	05(3F+2M)	01 (1F)	-	03 (Fiji 01, Mauritius 02) (1F+2M)
178	11.09.2017 – 07.09.2018	08	05 (3F+2M)	02(2M)	-	01(Mauritius) (OF+1M)
179	10.09.2018 – 06.09.2019	12	07(4F+3M)	02 (2M)	-	03 (Fiji) (1F+2M)
180	09.09.2019 – 11.09.2020	10	06 (2F+4M)	02(2M)	-	02(Mauritius) (0F+2M)
181	14.09.2020 – 10-09-2021	08	05(2F+3M)	02(2M)	-	01(Cameroon)(1M)
182	13.09.2021 - 09.09.2022	08	06 (2 F +4M)	02 (2M)	-	--
183	12.09.2022 – 08.09.2023	11	07 (6F + 1M)	02 (2M)	--	02(Mauritius) (1F + 1M)
184	11.09.2023 – 06.09.2024	2	--	02 (2M)	--	--

Table 1.3 Details of Met. Gr. II Training Course

Batch No.	Duration	Total No. of Trainees	IMD	Other Institutes	Foreigners With country
21	08.04.2015 – 07.04.2016	35	35 (7F +28M)	-	-
22	07.09.2015 – 06.09.2016	26	26 (5F +21M)	-	-
23	14.09.2016 – 13.09.2017	06	06(1F+5M)	-	-

Table 1.4 Direct Recruited Scientists Training Course

S No.	Duration of Training
1.	5 April-13 Aug, 2021
2.	1st March-31 July, 2022
3.	22nd May-30 Sep, 2023

Table 1.5 Details of Forecaster's Training Course (FTC)

Batch No.	Duration	Total No. of Trainees	IMD	Other Institutes	Foreigners With country
174	12.09.2011-09.03.2012	18	18		
175	12.03.2012-07.09.2012	8	8		
176	10.09.2012-08.03.2013	14	14		
177	11.03.2013-06.09-2013	7	7		
178	10.09.2013-07.03.2014	5	5		
179	10.03.2014-05.09.2014	5	5		
180	08.09.2014-	5	5		

	06.03.2015				
181	15.06.2015- 05.12.2015	48	48		
182	09.11.2015- 06.05.2016	46	46		
183	06.09.2016- 03.03.2017	26 51	26 51(4F+47 M)		
184	17.04.2017- 06.12.2017	46	46(3F+43 M)		
185	05.02.2018- 06.08.2018	29	29(5F+24 M)	-	-
186	10.09.2018- 08.03.2019	30	30(3F+27 M)	-	-
187	11.03.2019 - 07.09.2019	20	20(4F+16 M)	-	-
188	09.09.2019- 07.03.2020	23	23(0F+23 M)	-	-
189	30.03.2020 - 30.09.2020	40	40(8F+32 M)	-	-
190	12.10.2020- 09.04.2021	49	49(10F+39 M)	-	-
191	12.04.2021 - 08.10.2021	43	38 (3F+35M)	-	5(0F+5M) Cameroon
192	11.10.2021- 08.04.2022	41	41 (6F+35M)	-	-
193	14.02.2022 - 12.08.2022	40	39 (4F+35M)	--	1(0F+1M) Cameroon
194	13.06.2022 - 09.12.2022	53	53 (7F+46M)	-	-

195	10.10.2022 -07.04.2023	45	45(6F+ 39 M)	-	-
196	10.02.2023 - 11.08.2023	24	24 (3 F +21 M)		
197	25.09.2023 - 22.03.2023	40	40(5 F + 35 M)	--	--

Table 1.6 Details of Intermediate Training Course (ITC)

Batch No.	Duration	Total No. of Trainees	IMD	Other Institutes	Foreigners With country
229	26.11.2012 – 02.03.2013	21	21	-	-
230	04.03.2013 – 01.06.2013	17	17	-	-
231	03.06.2013 – 07.09.2013	27	27	-	-
232	10.09.2013 – 14.12.2013	23	23	-	-
233	16.12.2013 – 22.03.2014	25	24	-	01 (Srilanka)
234	24.03.2014 – 28.06.2014	30	30	-	-
235	30.06.2014 – 04.10.2014	24	24	-	-
236	07.10.2014 – 10.01.2015	73	73	-	-
237	12.01.2015 – 18.04.2015	63	63	-	-

238	20.04.2015 – 25.07.2015	33	33	-	-
239	27.07.2015 – 31.10.2015	28	28	-	-
240	11.04.2016 – 16.07.2016	55	55	-	-
241	01.08.2016 – 04.11.2016	43	43	-	-
242	21.11.2016 – 25.02.2017	63	63	-	-
243	09.04.2018 – 14.07.2018	07	07(2F+5M)	-	-

Table 1.7 Details of Integrated Meteorological Training Course (IMTC)

Batch No.	Duration	Total No. of Trainees	IMD	Other Institutes	Foreigners With country
01	08.04.2013 – 08.08.2013	88	88	-	-
02	19.08.2013 – 20.12.2013	89	89	-	-
03	06.01.2014 – 09.05.2014	81	81	-	-
04	26.05.2014 – 26.09.2014	36	36	-	-
05	18.07.2016 – 18.11.2016	8	8	-	-
Special Batch	05.06.2017 – 05.10.2017	18(1F+17M)	-	18 (Army Personnel)	-
06	11.06.2019- 11.10.2019	123	123(10F+13M)	-	-
07	21.10.2019-	129	129	-	-

	20.02.2020		(19F+110M)		
08	02.03.2020-03.07.2020	109	109 (20F+89M)		
09	10.08.2020 – 11.12.2020	92	92 (16F+76M)	-	-
10	28.12.2020-23.04.2021	95	85 (20 F+ 65M)	-	10 (3F+7M) (5- Maldives & 5- Cameroon)
11	17.05.2021 - 09.09.2021	82	82 (11F +71 M)	-	-
12	20.09.2021-21.01.2022	86	86 (F 14+72 M)	-	-
13	14.02.2022 - 10.06.2022	81	81 (F 2+ 79 M)	-	-
14	27.06.2022 – 27.10.2022	63	63 (F 8+ 55 M)	-	-
15	21.11.2022-24.03.2023	72	72 (F 10+ 62 M)	-	-
16	03.04.2023 – 04.08.2023	45	45 (F 7 + 38 M)	--	--
17	06.12.2023 - 05.04.2024	102	102(F 8 + 94 M)	--	--

Table 2: Details of Tropical Cyclones Forecasters Training Organised by RSMC New Delhi

S No	Year	Name of Training	Period	Countries
1	2005	WMO's TC Forecasters Training	Feb.	Bangladesh, Myanmar, Thailand and Forecasters from India
2	2006	WMO's TC Forecasters Training	Feb.	Bangladesh, Myanmar, Maldives and Forecasters from India
3	2007	WMO's TC Forecasters Training	12-23 Feb.	Bangladesh, Myanmar, Sri Lanka and Forecasters from India
4	2008	WMO's TC Forecasters Training	14-25 Feb	Srilanka, Thailand and Forecasters from India
5	2009	WMO's TC Forecasters Training	09-20 Feb.	Bangladesh, Maldives and Forecasters from India
6	2010	WMO's TC Forecasters Training	1-12 Feb.	Myanmar, Srilanka and Forecasters from India
7	2011	WMO's TC Forecasters Training	28Feb.-11 March	Bangladesh, Oman, Myanmar and Forecasters from India
8	2012	WMO's TC Forecasters Training	20 Feb-02 March	Thailand, Srilanka, Maldives and Forecasters from India
9	2013	WMO's TC Forecasters Training	1-12 April	Bangladesh, Myanmar, Oman and Forecasters from India
10	2014	WMO's TC Forecasters Training	17-28 February	Myanmar, Sri Lanka, Thailand and Forecasters from India
11	2015	International Training Workshop on Tropical Cyclone Forecasting	03-14 August	Myanmar, Sri Lanka, Thailand, Maldives, Oman, Bangladesh, Laos, Cambodia and Forecasters from India
12	2016	WMO's TC Forecasters Training	19-30 Sep	3 from Bangladesh, Maldives and Pakistan and Forecasters from India
13	2017	WMO's TC Forecasters Training	11-22 Dec	3 from Myanmar, Oman & Sri Lanka and Forecasters from India

14	2018	WMO's TC Forecasters Training	03-14 July	7 from PTC and TC members Bangladesh, Thailand, Cambodia, Lao PDR, Philippines, Thailand & Vietnam and Forecasters from India
15	2019	WMO's TC Forecasters Training	14-25 October	1 Bangladesh, 2 Qatar and Forecasters from India
16	2020	WMO's TC Forecasters Training	07-17 October	19 from WMO/ESCAP Panel member countries and all Forecasters from India Meteorology Department Head Quarter, Area Cyclone Warning Centres, Cyclone Warning Centres, Coastal Meteorological Centres and Meteorological Observatories.
17	2021	WMO's TC Forecasters Training (Online)	06-18 October	22 from WMO/ESCAP Panel member countries and all Forecasters from India Meteorology Department Head Quarter, Area Cyclone Warning Centres, Cyclone Warning Centres, Coastal Meteorological Centres and Meteorological Observatories.
18	2022	WMO's TC Forecasters Training (Online)	03-14 April	23 from WMO/ESCAP Panel member countries and all Forecasters from India Meteorology Department Head Quarter, Area Cyclone Warning Centres, Cyclone Warning Centres, Coastal Meteorological Centres and Meteorological Observatories.
19	2023	WMO's TC Forecasters Training (Online)	03-13 April	26 from WMO/ESCAP Panel member countries and all Forecasters from India Meteorology Department Head Quarter, Area Cyclone Warning Centres, Cyclone Warning Centres, Coastal Meteorological Centres and Meteorological Observatories.

Table 3: Details of Refresher courses conducted by IMD

S No.	Refresher Course	Duration
1	Online Lecture Series on Satellite Meteorology in association with South Asian Meteorological Association (SAMA).	02 Sept, 2023 - 20 Jan, 2024
2	Refresher Course on Marine Weather Forecasting and Cyclone Warning: Standard Operation Procedure	13-16 December, 2023
3	A short term training course on Radar was organised by ICITC training center (ISSD). Participants from IMD, IITM, IAF and RSMC member countries attended this training course. This training was in online mode.	18-22 September, 2023
4	Refresher course on "Satellite application for cyclone monitoring"	14-17 March, 2022
5	Familiarization training on "Maintenance, Measurements and Monitoring towards Quality Upkeep of Weather Radar"	2022
6	Refresher Course on "Interpretation and Application of NWP Product in Weather Forecasting Services".	17-21 January, 2022
7	Advanced Refresher Course on "Interpretation of NWP Products for Weather and Climate Forecasting Services".	11 -15 November, 2019
8	Refresher Course on "Interpretation of NWP Products for Weather Forecasting Services" conducted jointly by NWP Delhi and IMD Pune Training division.	12-16 Feb, 2018

Annexure-1**Subject: Oceanography & Marine Meteorology****Course: Advanced Meteorological Training Course / Met. Gr.-II Training Course****Target audience: Directly recruited Group A officers of IMD & Fresh recruited Meteorologists of National Meteorological Services from other countries and officers from Defense services, Govt of India****Semester: I****(Total duration = 5 working days = 30 periods of 75 minutes duration)**

- **Ocean observation platforms and communication of ocean data (5p)**
- Energy balance at the ocean surface (5P)
- Ocean waves and Swell: fundamentals of wind-wave generation, propagation and dissipation classification of waves: swells, wind-sea, rogue waves. Tides: generation and propagation of tides in the ocean (8 p)
- Multi-hazards of marine origin: Tsunamis, Storm surges (2)
- Marine Pollution and its impact on Coastal and Marine ecosystem (4P)
- Deep ocean circulation (2 P)
- Marine Meteorology: Marine Meteorological organization. Voluntary observing fleet. Meteorological broadcasts for shipping. Weather warnings issued to posts. Marine climatology. (4 P)

Subject: Physical Oceanography & Ocean-Atmosphere interaction**Course: Advanced Meteorological Training Course / Met. Gr.-II Training Course****Target audience: Directly recruited Group A officers of IMD & Fresh recruited Meteorologists of National Meteorological Services from other countries and officers from Defense services, Govt of India****Semester: II****(Duration = 7 working days= 42 Periods of 75 minutes)**

- **Physical properties of seawater and upper ocean vertical structure:**
Temperature, salinity, density, mixed layer, isothermal layer, barrier layer, thermal inversion-diurnal warm layer-cool skin-stability-vertical mixing-mixing

in Ocean-Richardson Number-Kelvin Helmholtz instability Richardson number- Double Diffusion and Salt Fingers. Vertical structure of other properties-light, sounds, nutrients, oxygen and chlorophyll. **(4 P)**

- **The significance of Ocean-Atmospheric Interactions. Concept of a system (Ocean/Atmosphere). Ocean-Atmosphere boundary layers:** Concept of Boundary Layer formation; Atmospheric Boundary Layer, Oceanic Boundary Layer, structure and Evolution, Skin and bulk SST, Air Temperature, Air sea temperature differences. Moisture and wind profile Evolution. Fresh water flux - Salinity variation in the vertical - Barrier layer. Turbulence, characteristics of Boundary Layer Spectrum. Integral scales of Eddies, K-theory /Taylor micro scale, Kolmogorov scale and Larger Scale, and Monin- Obukhov Similarity theory. **(6 P)**
- **Mixed layer heat and salt budget:** radiative and turbulent heat fluxes-mixed layer heat-salt budget equation. **(2 P)**
- **Introduction to dynamics:** Forces and equation of motion-conservation of mass-continuity equation,-divergence,-convergence,-vertical velocity-conservation Scale analysis,-Rossby, Ekman, Reynolds numbers and their significances. **(4 P)**
- **Currents without friction:** Geostrophic balance, inertial balance, cyclostrophic Balance, Thermal wind balance, level of no motion, -Concepts of Barotropic and Baroclinic circulation- velocity, geostrophic velocity at equator, - preliminary concept of barotropic and baroclinic instabilities-hydrostatic approximation, f-plane and beta-plane approximation, Boussinesq approximation, incompressibility. **(4 P)**
- **Currents with friction:** Ekman Dynamics, Ekman Spiral, Ekman Transport, Ekman Pumping, Coastal wind driven upwelling, open ocean upwelling, equatorial upwelling. **(3 P)**
- **General Ocean circulation:** Seasonal variability of Indian Ocean circulation. Sverdrup balance, westward Intensification, Introduction to equatorial Kelvin wave-coastal Kelvin wave, Rossby wave, ENSO, IOD, EQINOO, NAO. **(4 P)**
- **Ocean observations (insitu and remote sensing):** Instruments used in oceanographic studies, measurement of temperature salinity, conductivity, pressure With Depth. **(2P)**

Subject: Marine Meteorology

Course: Integrated Meteorological Training Course

Target audience: Newly recruited Scientific Assistants of IMD, Meteorological Technicians of National Meteorological Services from other countries

- Marine Meteorology: Basic measurements of meteorological/ oceanographic parameters. Importance of observations from Sea. Collection of marine data from Ship's log and their compilation. Importance of oceans in the atmospheric processes, and their role in weather/climate. Observations from oceans (in situ) and their procedural aspects; VOF. Surface meteorological and upper air observations on board ships, collection, exchange and archival. Ships Weather log. PMO/data collection.

Subject: Physical Oceanography & Ocean Atmosphere interaction

Course: Forecasters Training Course

Target audience: Promoted Group-B Gazetted officers of IMD and Promoted Meteorologists from National Meteorological Services of other countries, who have already completed Integrated Meteorological Training Course.

E- Learning Phase:

1. Physical properties of sea water; T – S diagram
2. Marine pollution; its sources, causes and its impact on marine environment briefly.
3. Global warming and sea level rise and its importance for coastal areas.

Class room learning Phase:

(Total duration = 18 periods of 75 minutes)

- **Ocean Dimensions, Shapes** (1 P).
- **Physical properties of seawater:** Temperature, Salinity and Conductivity, Density, Sound in the sea, Light in the sea, Colour of seawater. Temperature, Salinity and density distributions. Transparency of seawater. (2 P).
- **Typical Distributions of Water Characteristics in the Ocean:** Collection and analysis of data. (2 P).
- **Water, Salt and Heat Budgets of the Ocean:** Conservation of volume, Conservation of salt, Conservation of Heat Energy; Heat budget of the oceans:

Heat budget terms, Short and Long wave radiation, Evaporation, Heat conduction. Heat budget of Arabian Sea and Bay of Bengal. (3P).

- **Ocean Observations:** Tides, Waves, Ocean currents, Ocean colour, Transparency, Temperature, Salinity, Marine Meteorological parameters. (3 P).
- **Waves and tides:** Deep water waves, shallow water waves, wave propagation, sea and swell waves; Types of tides, Storm surges and tsunamis; (3P).
- **Circulation and Water Masses of the Oceans:** Thermohaline circulation, Wind-driven circulation, Circulation and water masses. Ocean-Atmosphere interaction in tropics. (4 P).
- **Air-Sea interaction, EL-NINO, LANINA and their effect on Indian summer monsoon (2P).**

Annexure-2

19th Tropical Cyclones and Storm Surge Forecasters Training Schedule [03-13 April 2023 during 0830-1130 UTC (1400-1700 IST)]		
Time (IST)	Time (UTC)	1st day (Monday) 03.04.2023
1400-1450	0830-0920	Inauguration
1400-1405	0830-0835	Welcome address by Dr. R.K. Jenamani, Sc. G & Head, RSMC
1405-1415	0835-0845	Address by Dr. Taoyong Peng, Chief TCP Division, WMO
1415-1425	0845-0855	Address by Dr. Sanjay Srivastava, Chief DRR, UN ESCAP
1425-1445	0855-0915	Inaugural Address by Dr. M. Mohapatra, Director General of Meteorology, India Meteorological Department & PR of India with WMO
1445-1450	0915-0920	Vote of Thanks by Dr. R.K. Giri, Scientist-F & Head (Organisation), IMD
1450-1455	0920-0925	Group photograph
1455-1535	0925-1005	Operational responsibility of RSMC New Delhi by Dr. R.K. Jenamani, Sc. G & Head RSMC New Delhi, IMD
1535-1620	1005-105-	Climatology of TCs over North Indian Ocean by Dr. A. K. Das, Scientist-F, IMD
1620-1700	1050-1130	Demonstration of Web Atlas of India by Dr. B Geetha, Scientist-D, IMD
		2nd day (Tuesday) 04.04.2023
1400- 1440	0830-0910	Radar input for Cyclone monitoring & prediction by Mr. B.A.M Kannan, Scientist-F, IMD
1440-1520	0910-0950	Practical on Radar applications: cyclone warning by Mr.B.A.M Kannan, Scientist F, IMD
1530-1610	1000-1040	Satellite products for TC monitoring by Mr. Chinmaya Khadke, Scientist-C, IMD
1610-1700	1040-1130	Dvorak technique for TC location & intensity determination by Mr. Chinmaya Khadke, Scientist-C, IMD
		3rd day (Wednesday) 05.04.2023
1400- 1440	0830-0910	Medium range and extended range Models for TC prediction by Dr. D.R. Pattanaik, Scientist-F, IMD
1440-1520	0910-0950	NCMRWF deterministic model for TC prediction by Dr. R.G. Ashrit, Sc.F, NCMRWF
1530-1610	1000-1040	Ensemble Prediction System for TC prediction, by Dr. Abhijit Sarkar, Scientist-F, NCMRWF
1610-1700	1040-1130	Statistical-dynamical modelling for TC forecasting by Dr. S.D. Kotal, Scientist-F, IMD

4th day (Thursday) 06.04.2023		
1400- 1440	0830-0910	HWRF Model for TC prediction by Dr. A.K. Das, Scientist-F, IMD
1440-1520	0910-0950	Synoptic aspects of TC Monitoring & Prediction by Dr. A.K. Das, Scientist-F, IMD
1530-1610	1000-1040	Cyclone genesis monitoring and prediction by Mrs Monica Sharma, Scientist-D, IMD
1610-1700	1040-1130	TC location, intensity and structure monitoring by Mrs Monica Sharma, Scientist-D, IMD
5th day (Friday) 07.04.2023		
1400- 1440	0830-0910	Marine Weather Forecasting by Dr. Amit Bhardwaj, Scientist-C, IMD
1440-1520	0910-0950	Operational storm surge and coastal inundation monitoring and forecasting by Dr. P L N Murty, Scientist-E, IMD
1530-1610	1000-1040	Cyclone genesis monitoring and prediction: A case study for decision making by Dr. M. Mohapatra, DGM, IMD
1610-1700	1040-1130	Practicals on TC genesis, location, intensity & structure monitoring and prediction by Dr. M.Mohapatra, DGM, IMD
6th day (Saturday) 08.04.2023		
1400- 1440	0830-0910	Wave and Swell forecasting by INCOIS by Dr. Balakrishnan T. M., INCOIS
1440-1520	0910-0950	Storm Surge modelling by IIT Delhi Model by Professor A.D. Rao, IIT Delhi
1530-1610	1000-1040	Operational cyclone track and intensity forecasting by Dr M Mohapatra, DGM, IMD
1610-1700	1040-1130	Practical on Operational cyclone track and intensity forecasting by Dr M Mohapatra, DGM, IMD
7th day (Monday) 10.04.2023		
1400- 1440	0830-0910	SWFP- South Asia by Dr. D.R. Pattanaik, Scientist-F, IMD
1440-1520	0910-0950	TCFP by Mrs. Monica Sharma, Scientist-D, IMD
1530-1610	1000-1040	Cyclone forecast verification: Mrs. Monica Sharma, Sc. D, IMD
1610-1700	1040-1130	Characteristics of Heavy rainfall associated with cyclones by Dr. Satya Prakash, Scientist-D, IMD
8th day (Tuesday) 11.04.2023		
1400- 1440	0830-0910	Operational TC forecasting at RSMC Tokyo by Dr. Ryo Oyama, Scientist, RSMC Tokyo
1440-1520	0910-0950	Preparation of user specific bulletins in India by Ms. Monica Sharma, Sc.D, IMD
1530-1610	1000-1040	Characteristics of monsoon circulations over the RSMC region by Dr. Sreejit, Scientist-E, IMD

1610-1700	1040-1130	TC hazard and impact forecasting: IWTC X recommendations, Mrs. Monica Sharma, Sc. D, IMD
		9th day (Wednesday) 12.04.2023
1400- 1440	0830-0910	Impact based forecasting by Team UNESCAP
1440-1520	0910-0950	Impact based forecasting by Team UNESCAP
1530-1610	1000-1040	Flash flood guidance in India & South Asia by Shri Rahul Saxena, Scientist-F, IMD
1610-1650	1040-1120	Impact based forecasting of TCs with Web DCRA in India by Dr. A.K. Das, Scientist-F, IMD
1650-1730	1120-1200	Impact Based Forecast of heavy rainfall by Dr. R.K. Jenamani, Scientist-G, IMD
		10th day (Thursday) 13.04.2023
1400- 1440	0830-0910	Cyclone Warning dissemination methods including CAP demonstration by Dr. Sankar Nath, Scientist-E, ISSD
1440-1520	0910-0950	Assessment Test
1530-1610	1000-1040	Countdown with disaster management agencies and public for cyclone management by Dr. M. Mohapatra, DGM IMD
1610-1700	1040-1130	Valedictory Function (Participants, Resource persons, DGM, Head RSMC, Head CWD and IMD Officers)