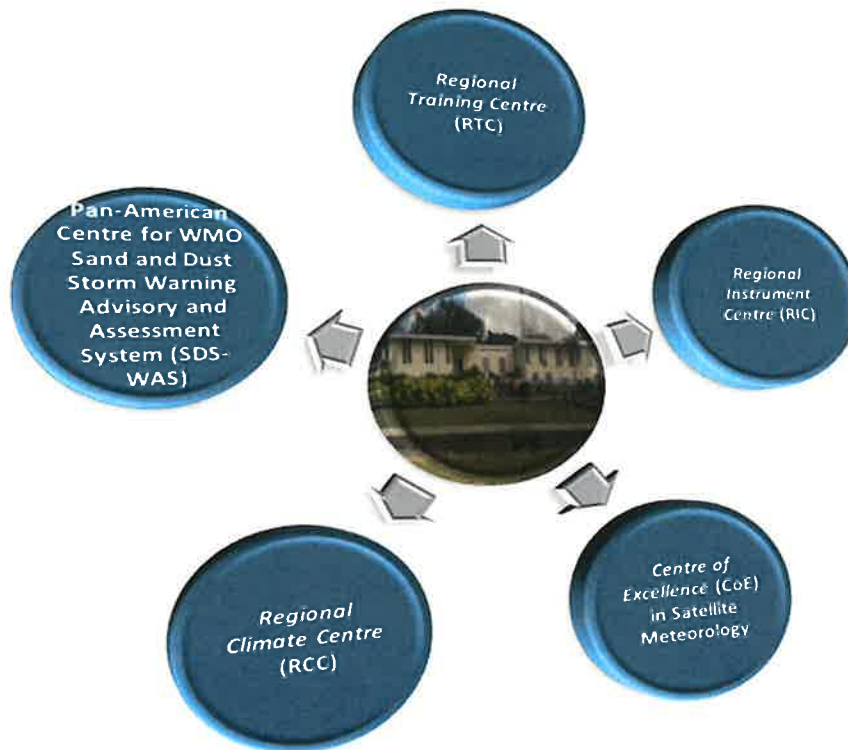


# *Caribbean Institute for Meteorology and Hydrology*

*A WORLD METEOROLOGICAL ORGANIZATION*



## *Training Courses 2023*

## METEOROLOGY

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### ENTRY LEVEL METEOROLOGICAL TECHNICIANS' COURSE No. 93/23

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*Duration: 03<sup>rd</sup> March – 28<sup>th</sup> July 2023 (Face-to-face)*

This course for observers is intended to provide basic meteorological knowledge and practice in weather observing procedures and in the plotting of synoptic and aviation reports. On completion of the course participants are expected to:

- (i) Be familiar with the procedures and rules governing the recording and coding of different weather elements.
- (ii) Accurately code, decode and plot synoptic and aviation reports, plot data on surface synoptic charts, upper air charts and thermodynamic diagrams.
- (iii) Extract hourly and daily data and tabulate these data on climatological forms.
- (iv) Determine when meteorological instruments are functioning properly.

*Nominations close 13<sup>th</sup> January 2023*

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### MID LEVEL METEOROLOGICAL TECHNICIANS' COURSE No. 49/23

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*Duration: 03<sup>rd</sup> March – 08<sup>th</sup> December 2023 (Face-to-face)*

Break: 31<sup>st</sup> July – 01<sup>st</sup> September 2023

This course is designed for senior meteorological technicians specializing in one of the following:

- (1) Applications of Meteorology.
- (2) Instrument Maintenance, Repair, and Calibration.

The Applications of Meteorology programme consists of elements of agrometeorology, climatology, hydrometeorology, and aeronautical meteorology.

The course is intended for experienced observers who are expected to supervise and instruct Entry-level personnel and assist Senior-Level personnel with the processing of data and the preparation of meteorological and other information. Graduates are expected to:

- (i) Have a thorough knowledge of the rules and regulations governing the observing, recording and use of meteorological and other data.
- (ii) Quality control data and complete simple statistical and other analysis of the data.
- (iii) Prepare summaries and reports of the analysed data
- (iv) Assist with field and other experiments in the areas of specialisation.

- (v) Inspect and set-up weather observation sites.
- (vi) Maintain, repair and calibrate relevant meteorological instruments.
- (vii) Assist with the briefing of pilots.

***Nominations close 13<sup>th</sup> January 2023***

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**SENIOR LEVEL METEOROLOGICAL TECHNICIANS' COURSE No. 25/23**

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**SLMT Bridging Course – 04<sup>th</sup> September to 08<sup>th</sup> December 2023 (Virtual)**

The Online Bridging course is a self-paced, asynchronous modular course, intended to help the SLMT candidates prepare for the SLMT course. The subject areas of the Bridging Course are Mathematics, Physics, and Introduction to Meteorology.

Graduates of this course are expected to:

- (i) Understand Basic mathematics to the level of pre-calculus.
- (ii) Understand Basic Secondary school-level Physics.
- (iii) Review Generally Meteorology topics.
- (iv) MUST PASS Pre-assessment entrance exam in December 2023.

*SLMT 25/23 Duration: 07<sup>th</sup> January 2024 – 14<sup>th</sup> July 2025*

- a. *Virtual Section<sup>1</sup> – Online SLMT course – January 2024 to July 2024*
- b. *Face-to-Face Section in Barbados – September 2024 to July 2025*

This course is designed to train personnel as meteorological forecasters. All major areas of meteorology are taught, but the emphasis is placed on tropical meteorology.

Graduates of this course are expected to:

- (i) Know and understand the main physical and dynamic processes and phenomena associated with the weather at all scales.
- (ii) Analyse and interpret synoptic weather charts and diagrams depicting current weather conditions.
- (iii) Identify the physical and dynamic processes creating the weather conditions and be able to predict what conditions will evolve from the effects of these processes.
- (iv) Interpret and use NWP products in the prediction of the weather.
- (v) Interpret satellite imagery and use it in analysis and forecasting.

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<sup>1</sup> To be confirmed

- (vi) Prepare terminal and other forecasts for aviation and prepare documentation for use in flight planning and aircraft movement.
- (vii) Know the weather conditions which are hazardous to the movement of aircraft and be able to predict these conditions.

***Nominations close 28<sup>th</sup> July 2023***

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**OPERATIONAL AERONAUTICAL FORECASTERS' COURSE No. 10/23**

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***Duration: 19<sup>th</sup> May – 21<sup>st</sup> July 2023***

This course is specifically designed for applicants with a B. Sc in Meteorology preparing to become operational forecasters. It provides theoretical aeronautical and operational procedures with an *emphasis on the practical and operational applications* of the theory to weather analysis and forecasting, particularly in the tropics. This course is designed to bring the applicants to a level that reflects the WMO first and second-level competencies for Aeronautical Meteorological Forecasters (AMFs).

Graduates of this course are expected to:

- (ii) Analyze and interpret synoptic weather charts and diagrams depicting current weather conditions.
- (iii) Identify the physical and dynamical processes creating the weather conditions and be able to predict what conditions will evolve from the effects of these processes
- (iv) Interpret and use NWP products in the prediction of the weather
- (v) Interpret satellite imagery and use these in analysis and forecasting
- (vi) Prepare terminal and other forecasts for aviation and prepare documentation for use in flight planning and aircraft movement
- (vii) Know the weather conditions which are hazardous to the movement of aircraft and be able to predict these conditions
- (viii) Familiar with the relevant ICAO and WMO standards, recommended practices, and codes relating to aviation.

***Nominations close 01<sup>st</sup> March 2023***

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**CIMH CONTINUING PROFESSIONAL DEVELOPMENT COURSE FOR  
AERONAUTICAL FORECASTERS No. 9/23**

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*Duration: 22<sup>nd</sup> September 2023 – 15<sup>th</sup> March 2024*

This course is an online course set up for current operational forecasters. It provides additional training in the areas associated with aeronautical meteorology. The course will be retooled to support the maintenance of the recommended approved Competency Standards for Aviation Meteorological Forecasting (WMO Publication No. 49, Technical Regulations, Volume I).

The minimum entry requirement for the course is successful completion of the BIP-M requirements as defined in the WMO Publication No. 1083, *Manual on the Implementation of Education and Training Standards in Meteorology and Hydrology*. Hence, participants must be a graduate of the Senior Level Meteorological Technicians' course and/or have a Bachelor's Degree in Meteorology.

*Nominations close 09<sup>th</sup> September 2023*

## HYDROLOGY

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### HYDROLOGICAL TECHNICIAN I COURSE No. HT 33/22

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*Duration: 29 August 2022–28 April 2023*

*Session 1: 29 August 2022–02 December 2022 (Online)*

*Session 2: 09 January 2023–28 April 2023 (In-person)*

This course is designed for hydrological technicians in areas of ground water, surface water, water quality and the acquisition and analysis of data. Fieldwork is normally conducted outside of Barbados. The course will be delivered in a blended format consisting of a combination of online (Session 1) and in-person (Session 2) delivery.

Technicians completing this course successfully would be able to do the following:

- (i) Work with and assist observer level technicians in the field of work but under guidance of experienced technicians and/or hydrologists.
- (ii) Undertake primary screening of hydrological data; carry out simple analyses and be able to store and retrieve data.
- (iii) Assist experienced technicians and/or hydrologists in research

***Nominations close 29 July 2022***

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### DIPLOMA IN HYDROLOGY COURSE No. DipH 21/23

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*Duration: TBD*

This course is designed to train personnel for the hydrological services in ground water, surface water and other related techniques and applications. Fieldwork is normally conducted outside of Barbados. The course is likely to be delivered in a blended format consisting of a combination of online and face-to-face delivery.

Technicians completing the Diploma course successfully are expected to:-

- (i) Supervise hydrological technicians.
- (ii) Carry out complete screening, analysis and dissemination of hydrological data for both surface and subsurface waters.
- (iii) With guidance from the hydrologist, conduct fieldwork in hydrometry, hydrogeology, geophysics, and ground water extraction
- (iv) Assist hydrologists in operations and research.
- (v) Collaborate with agencies in practical aspects of surface and ground water utilization.

## SHORT COURSES

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### **METEOROLOGY FOR GEOGRAPHY EDUCATORS 04/24 (ONLINE)**

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*Duration: 20<sup>th</sup> July to 17<sup>th</sup> August 2024*

This is a short course that is intended for CSEC/CAPE Level secondary school Geography teachers who wish to develop a greater understanding of the fundamentals of meteorology applicable to their CSEC/CAPE Geography syllabus. The goal of this course is for the teachers to be able to understand the principles governing climate and weather systems and to be able to explain basic meteorological processes so they can more effectively teach the concepts to secondary school students at the CSEC/CAPE level. It is also open to any other interested secondary school Geography teachers from all territories as it enhances their understanding of the fundamental meteorological concepts in all levels of the secondary school Geography syllabus.

*Nominations close on 31<sup>st</sup> May 2024*

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### **INTRODUCTION TO GEOGRAPHICAL INFORMATION SYSTEMS (ONLINE)**

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*Duration: TBA*

The course introduces some of the key aspects of the GIS discipline that involve the manipulation and management of spatial data. In this course, participants will learn how to apply proprietary and open-source software packages (i.e., ArcGIS and QGIS) to perform basic input, output, analytical processing, and visualization operations on spatial datasets. The skills acquired in this course may be directly applied to the processing, analysis, and visualization of spatial datasets used for GIS applications in meteorology, hydrology, disaster management, and several other fields. The course is aimed at public entities that provide services with a focus on water resources management, meteorology, climate, disaster management, and other affiliated areas at the national, regional, or international level. It is expected that persons taking the course will have had limited or no exposure to GIS.

*Nominations close on TBA*

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### **GIS FOR HYDROLOGICAL TECHNICIANS (ONLINE)**

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*Duration: TBA*

The course is aimed at public entities that provide services with a focus of water resources management, meteorology, climate, disaster management and other affiliated areas at the national, regional, or international level. It is expected that persons taking the course will be experienced in the use of GIS software at a beginner's level. Participants will learn how to apply GIS software for specific data processing and visualisation operations that prepare data as inputs for applications such as watershed analysis, flood analysis and flood hazard mapping. The course also serves as preparation for the Flood Hazard Mapping (ONLINE) course.

*Nominations close TBA*

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**HYDROLOGICAL MODELLING WITH HEC-HMS (ONLINE)**

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*Duration: 22<sup>nd</sup> August – 16<sup>th</sup> September 2022*

This course offers an introduction to rainfall-runoff modelling by introducing concepts and tools that can be used to complete basic hydrologic analysis. Participants will learn how to determine design rainfall and how to use that information to develop flow hydrographs using the HEC-HMS software packages. The course targets persons working in hydrology related fields with limited experience in rainfall-runoff modelling. It is recommended that persons with beginner level GIS skills first complete the Introduction to GIS (Online) course and the GIS for Hydrological Technicians (Online) course prior to taking this course. The course also serves as preparation for the Flood Hazard Mapping (ONLINE) course.

*Nominations close 13<sup>th</sup> August 2022*

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**ENVIRONMENTAL IMPACTS RELATED TO HYDROLOGICAL SYSTEMS (ONLINE)**

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*Duration: TBD*

This course examines anthropogenic processes and their impact on the management of surface and ground-water resources, the migration of pollutants such as oil, pesticides, landfill leachate into aquifers and environmental monitoring.

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**FLOOD HAZARD MAPPING (ONLINE)**

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*Duration: 24<sup>th</sup> October – 2<sup>nd</sup> December 2022*

Participants will learn how to prepare data for flood analysis and will be introduced to flood hazard modelling and mapping through an introduction to some basic functionalities within the HEC-RAS software package. It is recommended that persons complete the “Hydrological Modelling with HEC-HMS” and the “GIS for Hydrological Technicians” course before attempting the “Flood Hazard Mapping” course

*Nominations close 15 October 2022*

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**CARIBBEAN DEWETRA PLATFORM (ONLINE)**

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*Duration: TBD*

This course introduces participants to the Caribbean Dewetra Platform. Participants will learn about the available tools and products available on the platform and how they can be used to support impact-based forecasting and scenario-based disaster management. The course targets persons working in meteorological services, hydrological services and disaster management.



## UNIVERSITY OF THE WEST INDIES

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### B.Sc. DEGREE IN METEOROLOGY

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This is a three-year programme offered by the University of the West Indies in association with the CIMH.

For more information please refer to the UWI Cave Hill Campus Faculty of Science and Technology (<http://www.cavehill.uwi.edu/fst/prospective-students.aspx>). Additional information and an application form can be obtained from:

The Assistant Registrar (Student Affairs)  
University of the West Indies  
Cave Hill  
St. Michael  
Barbados, W.I.

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### GENERAL INFORMATION

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The minimum qualifications for all courses, with the exception of the B.Sc. programme, are 4 CXC Grade I – III (or GCE ‘O’ level equivalent) certificates including English Language, Mathematics and Physics. In addition, candidates for the Mid-Level Technician Course and Senior Level Technicians Course programme should also possess an Entry Level Technicians certificate.

**The maximum number of students on each class is 15.**

Requests for further information and applications should be sent to:

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