CMO DIRECTORS' MEETING

THE NEW SLMT PROPOSAL

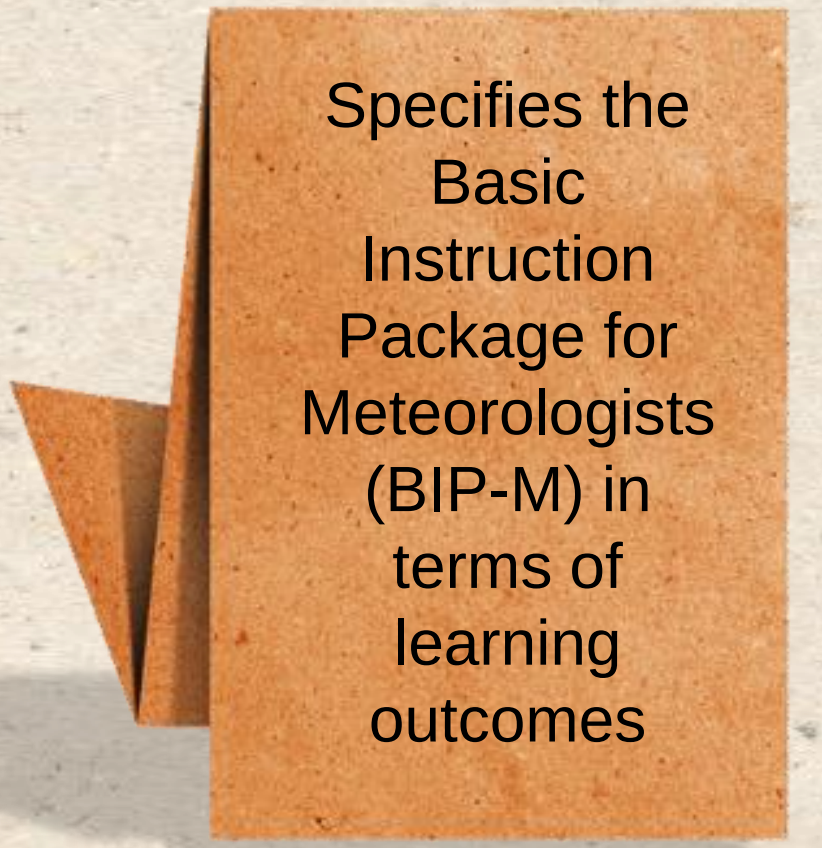
Caribbean Institute for Meteorology and Hydrology

Life in weather

Important Factors in the SLMT restructure

Maintaining the training standards	Build around the UWI schedule	Timing /Seasonality
• Preservation of the curriculum as recommended by WMO Guidelines No. 1083. • The SLMT candidates must meet the WMO Competency Standards for Aeronautical forecasters. • 'quality of education'- CIMH has had a long history of exceeding WMO recommended standards for training.	• The UWI schedule is firm commitment of CIMH's and NOT Flexible • There is only the limited number of Academic Staff (5 on record)	• The 18 months SLMT is only 15 months of teaching , less approximately 3 months break. • To maintain and practice the competency base exercises are best conducted in July (i.e. the rainy season)

Basic Instruction Package for Meteorologists



Physical meteorology
including air quality and observing technology.

Dynamic meteorology
including Numerical Weather Prediction (NWP).

Synoptic meteorology
including mesoscale meteorology and weather prediction.

Climatology
including both the traditional statistical description and the modern dynamical study and interpretation of the climate, as well as climate prediction.

Aeronautical Meteorological Forecaster

1. **A**nalyse and monitor continuously the weather situation;
2. **F**orecast aeronautical meteorological phenomena and parameters;
3. **W**arn of hazardous phenomena;
4. **E**nsure the quality of meteorological information and services;
5. **C**ommunicate meteorological information to internal and external users.

Degree in Meteorology

Prelim

CAPE –
MATH 1 and MATH 2
and Physics 2

Or
(Prelim Math 1 and 2
and Physic 1)

Level 1 = 24 credits minimum

Introduction to Oceans & Climate:

Meteorological Observations, Instruments and Basic Analysis

Introduction to Physical Meteorology

Introduction to Dynamic Meteorology

Calculus A

Calculus B

Level 2 – 20 + 10 optional

Atmospheric Thermodynamics:

Dynamic Meteorology :

Physical Meteorology

Synoptic Meteorology

Synoptic Meteorology Lab 1

Physics Math Methods

Fundamentals in Hydro-meteorology

Level 3 – 12 + 18 optional

Advanced Dynamic meteorology

Advanced Synoptic Meteorology

Synoptic Meteorology Lab II

Tropics and Tropical Weather Systems

Radars Meteorology

Satellite Meteorology

Climate, Biosphere and Ecosystems

Numerical Weather Prediction

Number of credits

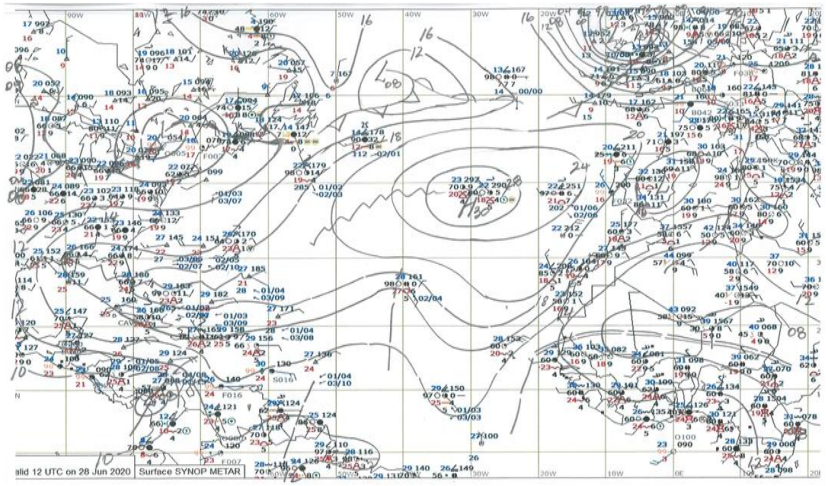
Level 1	= 24
Level 2 ad 3	= 60
Foundation courses	= 9
Total	**= 93**

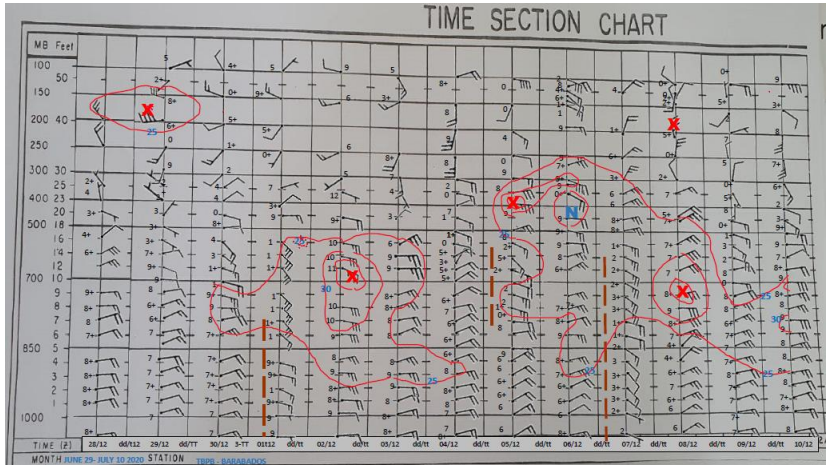
The 3-credit UWI Meteorology Programme

YEAR 1: Semester I	Credits	YEAR 1: Semester II	Credits
METE1110 Introduction to Oceans and Climate	3	METE1135 Introduction to Dynamic Meteorology	3
METE1125 Meteorological Observations, Instruments and Basic Analysis		METE1125 Meteorological Observations, Instruments and Basic Analysis	3
METE1130 Introduction to Physical Meteorology	3	MATH1195 Calculus B	3
MATH1190 Calculus A	3	Foundation Course	3
Foundation Course	3	MATH1235 Python or COMP1205 Computing I (E)	3
Level 1 course	3		
Total Credits	15	**Total Credits**	15
YEAR 2: Semester I	**Credits**	**YEAR 2: Semester II**	**Credits**
METE2110 Atmospheric Thermodynamics	3	METE2120 Physical Meteorology	3
METE2125 Dynamic Meteorology – N EW	3	METE2210 Synoptic Meteorology – NEW	3
*METE2305 Fundamentals of Hydrometeorology – NEW (E)	3	METE2215 Synoptic Meteorology Lab I – NEW	3
PHYS2400 Mathematical Methods in Physics I	3	Level 2 course	3
Foundation Course	3	Level 2 course	3
		Level 2 course	3
Total Credits	15	**Total Credits**	18
YEAR 3: Semester I	**Credits**	**YEAR 3: Semester II**	**Credits**
METE3110 Advanced Dynamic Meteorology - NEW	3	METE3310– The Tropics and Tropical Weather Systems	3
METE3210 Advanced Synoptic Meteorology - NEW	3	*METE3600 – Numerical Weather Prediction and Computational Methods – NEW (E)	3
METE3215 Synoptic Meteorology Lab II - NEW	3	*METE3425 Satellite Meteorology- NEW (E)	3
*METE3420 Radar Meteorology – NEW (E)	3	*METE3505 Climate, Biosphere and Ecosystems - NEW (E)	3
Level 2 or 3 course	3	Level 2 or 3 course	3
Total Credits	15	**Total Credits**	15

The COVID-19 Experience Lessons Learnt

The impact of the COVID-19 pandemic





- CIMH lecturers were able to make a seamless transition to online classes.
- CIMH has the technological capacity to support virtual training and investing in more,
- Meteorological data visualization platforms such as COROBOR Messir, METLab and IDV visualization software were fully utilized..
- Theoretical curriculum can remained unchanged and the online classes can be synchronous
- It was quickly recognised that Practical has to be face to face ,

The COVID-19 Experience Lessons Learnt

There were a few other lessons

- Secure steady and reliable internet access is a MUST;
- Access to a good computer, laptop, tablet or phone; with access to a camera on their device(s) and a printer and or scanner.

- Computer fatigue in REAL,
- Spending 6 hour plus on screen can be tiring;
- Students and lecturers experiences headaches and pain in the eyes, neck and back.
- Unable to focus- Students were on calls watching movies and even signing in and NOT attending class.

Meteorology Staff Teaching Load

Kathy-Ann Caesar

UWI

- Advanced Synoptic Meteorology
- Synoptic Meteorology Lab II

SLMT

- Synoptic Meteorology 2
- Tropical Meteorology
- FOS

Lawrence Pologne

UWI

- Advanced Dynamic Meteorology
- The Tropics and Tropical Systems
- Satellite Meteorology

SLMT

- Satellite Meteorology
- Synoptic Meteorology
- Tropical Meteorology
- FOS

Margarette Mayer-Als

UWI

- Dynamic Meteorology
- Synoptic Meteorology
- Synoptic Meteorology Lab I

SLMT

- Dynamic Meteorology
- Dynamic Meteorology 2
- Aeronautical Meteorology
- FOS

Andrea Sealy

UWI

- Atmospheric Thermodynamics
- Physical Meteorology

SLMT

- Thermodynamics
- Cloud Physics
- Radiation
- Oceanography

Ashford Reyes

UWI

- Introduction of Physical Meteorology
- Meteorological Observations, Instruments and Basic Analysis
- Introduction to Dynamic Meteorology
- Radar Meteorology
- Numerical Weather Prediction

SLMT

- Introduction to Meteorology
- Radar Meteorology

The NEW SLMT Format

The New SLMT Proposal - Blended Course over an 18-month period.

The COVID – 19 Experience allow the testing and evaluation of methods of teaching that has lend to the New SLMT proposal.

The new course will be essentially in three periods.

- **Pre-assessment** – September to December 2021
  - The COMET Bridging Course in Mathematics and Physics
  - Self paced and MUST PASS Pre-assessment.
- **Virtual Section** – January to July 2022
  - Synchronous virtual classes.
  - MUST have a passing grade to move
- **Face to Face Section** – September 2022 to July 2023
  - In person at CIMH
  - Including the Forecast Office Simulation

New SLMT structure

MUST have Passing Grades to start course

Pre assessment – September to December 2021

- Mathematic syllabus – Basic CSEC Mathematics
- Physics Syllabus – Basic Physics – CSEC Physics

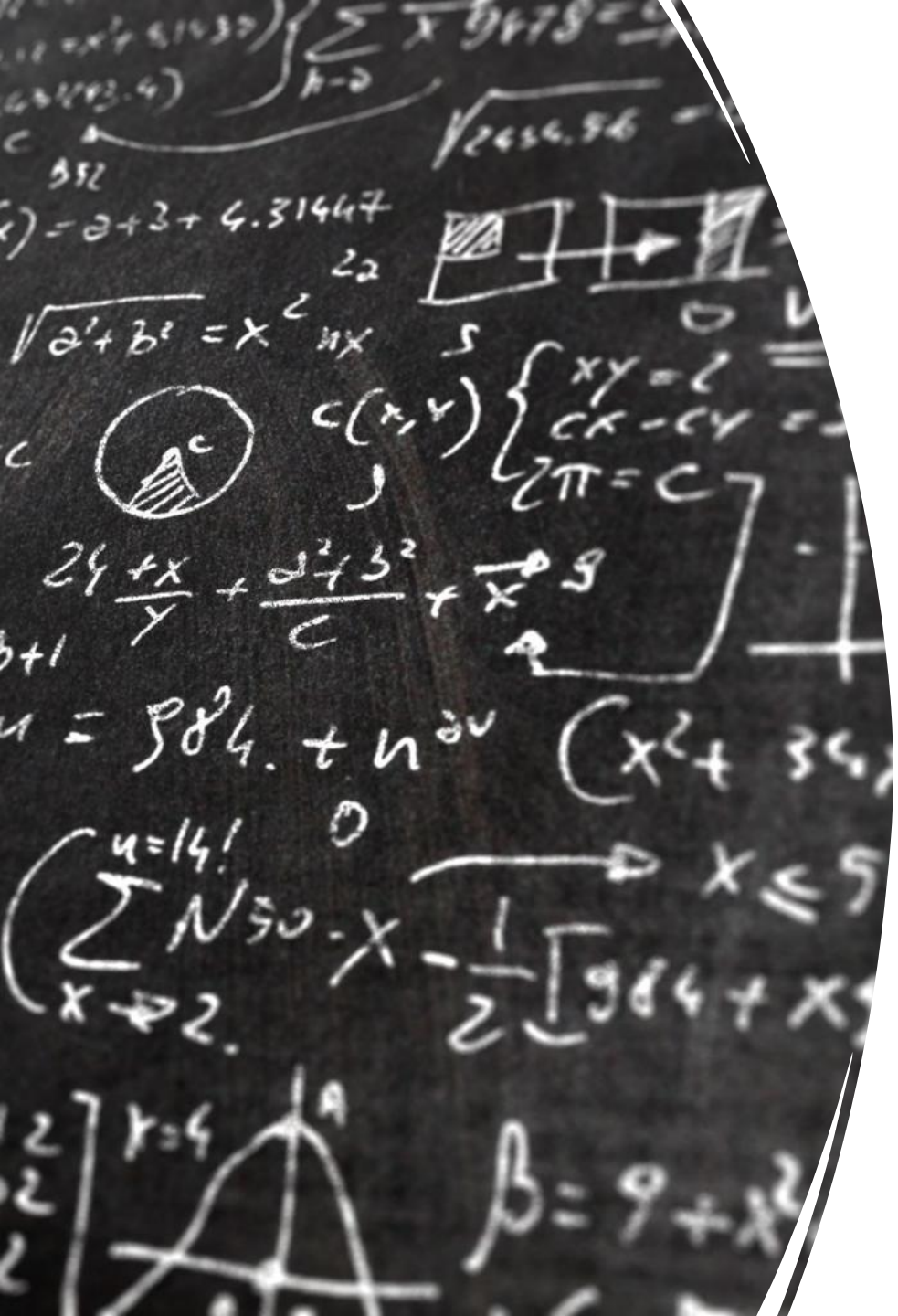
MUST PASS Pre-assessment to start course

Virtual Section – Online SLMT course *– January to July 2022*

- **Session 1 – January to March**
  - Subject: Mathematics -Pre calculus to Calculus 1, Physics, Introduction to Meteorology and Analysis, Oceanography and GIS.
- **Session 2 – April to July**
  - Subjects - Mathematics - Calculus 1 to Calculus 2, Atmospheric Thermodynamics, Dynamic 1, Synoptic 1 and Satellite Meteorology.

Face to Face Section in Barbados *– September to July*

- **Session 3 – September to December**
  - Subjects – Mathematics -Calculus 2 to Differential Equations, Cloud Physics, Synoptic 2, Dynamics 2
- **Session 4 – January to March**
  - Subject – Tropical Meteorology, Radiation, Advanced Weather Analysis, Statistics, Climatology
- **Session 5 – April to July**
  - Subjects – Radar Meteorology, Hydro Meteorology, Aeronautical Meteorology, Forecast Office Simulation



The Degree Forecasters' Course

- Candidates with a BSc in Mathematics or Physics will take an abridged version of the SLMT course.
- This will be the CIMH Degree Forecasters' course,
- These candidates join the SLMT course in the Session II (May- even year) during the Virtual Session, and
- Continue in the Face to Face sessions from September.
- Degree Forecasters' candidates must register a pass in the Advanced Mathematics and Physics Pre-test to be accepted into the BIP-M course 2022.

Role of the NHMSs

- The National Meteorological and Hydrological Services (NMSs) will have a large role to play in the preparation and maintenance of their SLMT candidates.
- CIMH is requesting that the NMSs appoint a Training **Liaison Officer**.
  - The Liaison Officer ensures communication between CIMH and the SLMT candidates;
  - Track the performance of the candidates;
  - Provide in-country guidance in collaboration with CIMH, to the candidates where necessary; and
  - ensures the security of assessments.
- To assure the security of the course assessments,
  - a secure room for assessments.
  - CIMH will have a designated Final Assessment Week
- NOTE NMHS - During the period of virtual training, the candidates are considered to be engaged in SLMT training and not available for operational duties.

THANK YOU

- **Questions**