COMET Training Module Requirement

As part of the WMO certification for the South American and Tropical Desk Trainings, each fellow is must complete, as a minimum, **seven (7) COMET training modules** prior to the last week of training. Every fellow must complete **one** training module **from each of the following module categories**:

1. **Climatology**
2. **Numerical Weather Prediction**
3. **Public Support**
4. **Satellite**
5. **Synoptic Meteorology**

Tropical Desk fellows must complete **two (2)** additional modules from the **Tropical Meteorology Category**. South American Desk fellows are to complete **one** module from the **Tropical Meteorology Category** and **one** from the **South American Meteorology Category**. The passing grade is 70%. The certificate that includes the grade and date of completion must be emailed to the supervisors. It is recommended that the seven modules are completed by the 3rd month of training.

MODULE ACCESS

The training modules can be accessed online via https://www.meted.ucar.edu/. The COMET website requires the generation of an account, for which either Michel Davison or José Gálvez can be referred to as the supervisor. The list of modules available follows. The ones most applicable to the training desks are highlighted for reference (†), but this is just a suggestion.

1. Climatology

- **Climate Change and Regional Impacts**
- **Climate Change and Extreme Weather**
- **Climatology for the Operational Forecaster**
- **The El Niño-Southern Oscillation (ENSO) Cycle**
- **†ENSO and Beyond**
- **MJO, Equatorial Waves, and Tropical Cyclogenesis**
- **Introduction to Climatology**
- **Monitoring the Climate System with Satellites**
- **Introduction to Climate Models**
- **Introduction to Statistics for Climatology**
- **The Amazon Rain Forest and Climate Change**
- **†The Madden-Julian Oscillation Life Cycle**
- **The Role of the MJO in Oceanic and Atmospheric Variability**
- **Understanding Drought**
- **Using Climatological Products in Common Operations**

2. Numerical Weather Prediction

- †Adding Value to NWP Guidance
- Effective Use of High-Resolution Models
- Effective Use of NWP in the Forecast Process: Introduction
- How Satellite Observations Impact NWP
- How Models Produce Precipitation and Clouds - version 2
- Intelligent Use of Model-Derived Products - version 2
- Model Fundamentals - version 2
- †Operational Models Matrix: Characteristics of Operational NWP Models
- Preparing to Evaluate NWP Models
- Ten Common NWP Misconceptions

3. Public Support

- †Anticipating Hazardous Weather and Community Risk, 2nd Edition
- Community Hurricane Preparedness, 2nd Edition
- Customer Impacts: Forecasting Fog and Low Stratus
- †Flash Flood Processes
- Hurricane Strike
- The Impact of Weather on Air Traffic Management

4. Satellite

- †Basics of Visible and Infrared Remote Sensing
- Creating Meteorological Products from Satellite Data
- †Feature Identification Using Environmental Satellites
- †Multispectral Satellite Applications: RGB Products Explained
- †Polar Satellite Products for the Operational Forecaster: Microwave Analysis of Tropical Cyclones
- Satellite Feature Identification: Blocking Patterns
- †Satellite Feature Identification: Cyclogenesis
- Satellite Feature Identification: Conveyor Belts
- Volcanic Ash: Observation Tools and Dispersion Models
- Volcanic Ash: Introduction
- Volcanic Ash: Volcanism
- †Vorticity Maxima and Comma Patterns
- Vorticity Minima and Anticomma Patterns
- WMO Regional Satellite Workshop

5. Synoptic Meteorology

- †A Convective Storm Matrix: Buoyancy/Shear Dependencies
- Dynamically Forced Fog
- EUMeTrain's Synoptic Textbook
- EUMeTrain's Manual of Synoptic Satellite Meteorology
- †Flash Flood Processes: International Edition
- Flood Forecasting Case Study: International Edition
- †Isentropic Analysis
- †Jet Streams
- †Jet Streak Circulations
- †Mesoscale Convective Systems: Squall Lines and Bow Echoes
- Nighttime Radiation and Cooling of the Lower Atmosphere
- Principles of Convection I: Buoyancy and CAPE
- Principles of Convection III: Shear and Convective Storms
- Quantitative Precipitation Forecasting Overview
- S-290 Unit 5: Temperature and Relative Humidity Relationships
- †Should Synopticians Worry About Climate?
- Skew-T Mastery
- Synoptic Weather Considerations: Forecasting Fog and Low Stratus
- Thermally-forced Circulation I: Sea Breezes
- Thermally-forced Circulation II: Mountain/Valley Breezes
- †Tropical Mesoscale Convective Systems

6. South America Meteorology

- Antarctica: Challenging Forecasts for a Challenging Environment
- VLab's Conceptual Models for Southern Hemisphere
- †Tropical-Extratropical Air Mass Interactions in South America

7. Tropical Meteorology

- †African Easterly Waves
- †Conceptual Models of Tropical Waves
- Introduction to Tropical Meteorology, 2nd Edition, Chapter 1: Introduction
- Introduction to Tropical Meteorology, 2nd Edition, Chapter 2: Tropical Remote Sensing Applications
- †Introduction to Tropical Meteorology, 2nd Edition, Chapter 3: Global Circulation
- Introduction to Tropical Meteorology, 2nd Edition, Chapter 4: Tropical Variability
- Introduction to Tropical Meteorology, 2nd Edition, Chapter 5: The Distribution of Moisture and Precipitation
- †Introduction to Tropical Meteorology, 2nd Edition: Chapter 7: Synoptic and Mesoscale Systems

- †Introduction to Tropical Meteorology, 2nd Edition, Chapter 8: Tropical Cyclones
- Introduction to Tropical Meteorology, 2nd Edition, Chapter 9: Observations, Analysis, and Prediction
- Topics in Tropical Meteorology
- Tropical Cyclone Intensity Analysis
- Tropical Mesoscale and Local Circulations
- †Tropical Severe Local Storms

Others: Aviation

- Atmospheric Dust
- Basic Terminal Forecast Strategies
- Forecasting Dust Storms - Version 2
- Forecasting Aviation Icing: Icing Type and Severity
- Fog: Its Processes and Impacts to Aviation and Aviation Forecasting
- Fog and Stratus Forecast Approaches
- Forecasting Radiation Fog
- Gap Winds
- Local Influences on Fog and Low Stratus
- Low-Level Coastal Jets
- Mountain Waves and Downslope Winds
- Radiation Fog
- Topics in Precipitation Type Forecasting
- Tropical Fog: A Look at Fog That Impacts Aviation in Guyana
- Volcanic Ash: Impacts to Aviation, Climate, Maritime Operations, and Society
- West Coast Fog
- Writing Effective TAFs
- Writing Effective TAFs in the Caribbean
- Writing TAFs for Convective Weather, 2nd Edition
- Writing TAFS for Ceilings and Visibility
- Writing TAFs for Winds and LLWS

Others: Radar

- Caribbean Radar Cases
- Caribbean Radar Products
- Satellite Feature Identification: Atmospheric Rivers
- Radar Signatures for Severe Convective Weather
- Weather Radar Fundamentals