

## **Advanced Meteorology (STRCTR-18)**

### **AKA Upgrade: Advanced Meteorology**

**Length** 40 hours (1 week)

**This Course is USCG Approved and STCW Compliant. The course certificate will state:**

“This Course is hereby recognized as a Coast Guard Approved Training Course as outlined in Subpart C of Part 10, Title 46, Code of Federal Regulations. Any applicant who has successfully completed our 40-hour Advanced Meteorology course will satisfy : 1. Advanced Meteorology training requirements of 46 CFR 11.305(a)(3)(iii) and 11.307 (a)(3)(iii) for STCW endorsements as Master or Chief Mate on vessels of 3,000 GT or more AND, 2. 46 CFR 11.311 (a) (3)(iii) and 11.313(a)(3)(iii) for STCW endorsements as Master or Chief Mate on vessels of more than 500 GT and less than 3,000 GT; AND, 3. The following practical assessments performed during this course have been determined to be equivalent of National Assessment Guidelines for STCW Code, as amended 2010 Table A-II/2, as documented in NVICs 10-14 and 11-14: 7.1.A; 7.2.A; 7.3.A; 7.4.A; 7.4.B; and 7.4.C.”

### **Objective**

Each student who successfully completes this course will be knowledgeable of and have proficiency in forecasting weather and oceanographic conditions. Additionally, students will gain knowledge of:

- **SYNOPTIC CHARTS**
  - Synoptic and prognostic charts and forecasts from any source
  - The range of information available through fax transmission, internet and email
- **CHARACTERISTICS OF VARIOUS WEATHER SYSTEMS**
  - Fronts and mid-latitude lows
  - Non-frontal systems
  - Tropical revolving storms (TRS)
- **WEATHER FORECASTING AND VOYAGE PLANNING**
  - Weather Forecasting
  - The principle of voyage planning with respect to weather conditions and wave height
  - Climatological Routing
  - Synoptic Weather Routing
  - Avoidance of Tropical revolving storms (TRS)
- **OCEAN CURRENT SYSTEMS AND ICE**
  - Surface water circulation of the ocean and principal adjoining seas
  - The formation of sea waves and swell waves
  - The main types of floating ice, their origins and movements
  - The guiding principles relating to the safety of navigation in the vicinity of ice
  - Conditions leading to ice accretion on ship's superstructures, dangers and remedies available
- **TIDE AND CURRENTS**
  - Ability to calculate tidal conditions
  - Appropriate nautical publications on tides and currents and information which can be obtained via internet and email

### **Scope**

This course that is intended to meet the training requirements as listed above in the USCG Approved and STCW Compliant Course Certificate section.

### **Entry standards**

This course is open to students who have a need for such training as required by the United States Coast Guard and STCW as amended. Each student should have an STCW Certification as an “Officer-in-Charge of a Navigation Watch” or have an equivalent and experiential background, be in good physical health and speaks and understands English.

This is a concentrated advanced level 5-day course in Meteorology that requires that the student already have a general basic knowledge and understanding of weather and weather systems.

Topics to be covered include:

- **basic requirements and responsibilities of forecasting weather and oceanographic conditions**
- **planetary and synoptic scale meteorology** – *planetary system of wind and pressure*
- **the weather associated with principal air mass types**
- **500 Mb upper air concepts and facsimile charts**
- **characteristics of various synoptic systems** – *the formation, structure, and weather associated with depressions and principal frontal systems – the formation structure and weather associated with non-frontal depressions and weather systems – the formation of sea waves and sea swells*
- **Application of facsimile charts** – *Evaluation of synoptic scale analyses and prognostic charts from any source - The Maritime*

*Forecast Code and the range of information available through fax transmissions – voyage planning with respect to weather conditions and wave height*

- **Tropical Revolving Storms (TRS)**
- **Ocean current systems** – *surface water circulation of the ocean and principle adjoining seas*
- **Types of ice, origins and movements** – *the guiding principles relating to the safety of navigation in the vicinity of ice – conditions leading to ice accretion on ship's superstructure, dangers and remedies available*
- **Meteorological tide and currents**
- **Forecasting and routing software systems**

**Please be prepared for class with the following:**

Prior to reporting for the course it is highly recommended that any unfamiliar topics be reviewed using one or both of the following course references:

Weather for the Mariner 3rd Ed.

William J. Kotsch, Rear Admiral, U.S. Navy (retired)  
1983

Mariner Weather  
Nathaniel Bowditch  
1977

For further information on these and all Upper Management Level assessments, may check the following USCG website: <http://www.uscg.mil/nmc/stcw/>

Look under *Merchant Marine Information Center* (green highlight)/Policy and Guidance. Select 2002 from menu. Look for Policy number 04-02. Scroll down and you will find the Upper Management Level Assessments.

**Teaching Facility**

STAR Center, Dania Beach, Florida

