

**Reference No**

011/015

**Duration**

2 weeks

**Location**

HMS DRAKE

**IELTS**

6.5

**Frequency**2 courses  
per year

# OCEANOGRAPHY

**AIM OF COURSE**

To enable the student to provide cogent, effective and accurate tactical oceanographic advice in support of naval operations, principally those involving anti-submarine warfare (ASW), using a basic understanding of physical oceanography and underwater acoustics.

**OUTLINE SYLLABUS**

Basic global physical oceanography, including bathymetry, water masses, temperature and salinity profiles, principal currents and other physical properties of seawater.

The fundamentals of ASW including submarine types, capabilities and likely operating patterns, active and passive sonars, other methods of detection and ASW Weapons.

Underwater acoustics to a level suitable for the practical support of ASW from the surface warship and submarine perspectives. This includes an examination of propagation losses, refraction, underwater noise levels and low frequency effects.

Detailed scrutiny of the basic sonar equations as they apply to ASW. This includes an examination of the variability inherent in their various terms, especially those affected by the environment.

Learning in all aspects of the course is enhanced by practical work in small groups, using environmental data provided by the WADER global ocean information system, the UK Hydrographic Office and other sources. Scenarios are designed to reflect a number of plausible scenarios worldwide using realistic platform, sonar and target data.

**EXAMINATIONS/QUALIFICATIONS GAINED**

- ◆ This course is normally run as part of a longer 19-week meteorology and oceanography course (011/017) provided for RN officers and senior ratings which leads to the award of a post-graduate certificate in meteorology and oceanography. This arrangement allows for natural interaction and a great deal of mutual benefit for all students during the two-week oceanography module
- ◆ Students participating in the oceanography module only are not normally examined, although this can be arranged on request. Certificates of attendance are always provided