NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number-	**0064778**		**-Session-1986-87**
-Superclass-	**XQ**		
-Title-	**PRINCIPLES OF NAVAL ARCHITECTURE 3**		

-DESCRIPTION-

Type and Purpose

A <u>specialist</u> module which enables the student to:

(a) extend his/her ability to determine and use factors related to stability;

(b) comprehend the factors associated with launching.

Preferred Entry Level

04777 Principles of Naval Architecture 2.

Learning Outcomes

The student should:

1. know and apply relevant methods to determine factors associated with longitudinal stability;

2. obtain final draughts for particular sailing conditions;

3. apply the concepts of transverse and longitudinal stability to determine factors associated with docking and grounding;

4. comprehend the factors associated with launching.

Content/ Context

Corresponding to the Learning Outcomes:

1. basic conditions for longitudinal equilibrium; explanation of trim; definition and calculation of longitudinal second moment of area, BM , KM , GM and MC 1cm for floating bodies.

Practical examples involving the effect of varied longitudinal loading conditions on final draughts; use of longitudinal trimming lever B-G completion of hydrostatic curves (BM , KM , MC 1cm).

2.   determination of true ship displacement in a trimmed condition by:

(a)   obtaining a displacement figure from a true mean draught;

(b)   applying a layer correction;

(c)   calculation of LCG in a trimmed condition from level keel information;

(d)   change in ship draught and/or trim due to changes in the water density.

3.   terms and variables associated with docking/grounding; calculations and practical applications related to vessels in a partially supported condition.

4.   interpretation of information normally shown on a set of launching curves; relevant calculations associated with the launching of box shaped vessels from ways having declivity but no camber.

Suggested Learning and Teaching Approaches

Written, graphical and oral communication skills should be developed through individual and group exercises.

The use of prepared computer software is recommended to enhance problem solving skills.

Classwork may involve a mixture of practice and theory supplemented by data from various technical sources. Tidy and logical layout of calculations and graphical work should be demonstrated and encouraged throughout the module.

Assessment Procedures

All learning outcomes must be validly assessed.

The student must be informed of the tasks which contribute to summative assessment. Any unsatisfactory aspects of performance should, if possible, be discussed with the student as and when they arise.

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each learning outcome.

The following abbreviations are used below:

LO   Learning Outcome
IA   Instrument of Assessment
PC   Performance Criteria

LO1   IA   Assignment.

PC   The student uses appropriate methods to:

     (a)   obtain correct values for longitudinal stability variables;

     (b)   produce related hydrostatic curves.

LO2   IA   Assignment.

PC   The student correctly interprets hydrostatic curves and uses the information to obtain valid values for the associated variables listed in the Content/Context.

LO3   IA   Assignment.

PC   The student satisfactorily applies appropriate rules and/or formulae to obtain valid values for docking and grounding.

LO4   IA   Project report.

PC   The student compiles a report on a comprehensive launching problem which includes:

     (a)   relevant calculations leading to the production of launch curves;

     (b)   interpretation of information from launch curves;

     (c)   reasonably valid conclusions related to the safety of the launch.