



Indian Institute of Technology

Course Details Report

Course No: OE5075

Course Name: Warship Design

Course Type:

Theory

Description:

The objective of the course is to provide the knowledge and skill sets to undertake the synthesis of a warship by the process of concept exploration and concept design leading to the definition of a warship.

Course Content:

The Role of Surface warships, Types of Surface Combatant, Aircraft carrier, Destroyers, Frigates, Amphibious warfare Ships and mine counter measures. The weapon equipment, anti-missile, anti-submarine and anti-surface weapons, Payload synthesis and the impact of weapon fit on warship design. Mono hull warship weight volume synthesis, Top deck layout, Hull form development, Surface combatant hydrostatic and stability assessment, subdivision and damage stability analysis. Introduction to design standards and codes relevant to warship Warship structural Design, Mid ship section evolution from first principle, design of bulkhead and secondary structure to withstand explosive loading. Resistance prediction, low noise highly skewed warship propeller design, seakeeping and manoeuvring standards for warship. Stealth, Ship detection and counter detection, Design effect of radar cross section, infrared signature and noise signature. Future hull forms, machinery , propulsion system and weapon system

Text Books:

PJ Gates "Surface Warships-An Introduction to design principles," 1987 Brassey's Defence Publishers.

Reference Books:

1. David GM Watson "Practical Ship Design," 2002 published by Elsevier
2. "Ship Design data Book" 2000 University College of London
3. Standards and Classification Society Rules for Naval Ships. (NES, IRS, ABS etc.)
4. Thomas Lamb "Ship Design and Construction" Vol 2 published by SNAME