OMV751 MARINE VEHICLES

DETAILED SYLLABUS

OBJECTIVES:

- To provide the students a basic knowledge about various types of marine vehicles
- To provide the students basic theory behind the design and development of marine vehicles

UNIT I MARINE VEHICLES

Types – general – by function – commercial marine vehicles- passenger ship, cargo ships, oil and chemical tankers, cattle carriers, harbor crafts, off shore platform, container ships UNIT II REEFERS AND GAS CARRIERS 9 Introduction – Types, design considerations, safety – operation and controls, precaution during bunkering

UNIT III REMOTELY OPERABLE VEHICLE (ROV), UMS SHIPS

Remotely Operable Vehicles (ROV) – The ROV business – Design theory and standards – control and simulation – design and stability – components of ROV – applications, UMS operation, and controls

UNIT IV SUBMERSIBLES AND AUTONOMOUS UNDERWATER VEHICLE (AUV)

submersibles types – applications, AUV – Design and construction considerations – components – sensors – Navigation -control strategies – applications

UNIT V MANNED AND UN MANNED SUBMERSIBLE

Introduction – Design and operational consideration – pressure hull exo-structure – ballasting and trim – maneuvering and control – Life support and habitability – emergency devices and equipment's – certification and classification, towed vehicles – gliders – crawler – Design and construction

OUTCOMES:

- Students will be able understand the types of marine vehicles
- Students should get a preliminary knowledge in marine vehicle design, construction and its components

TEXT BOOKS:

1. Jonathan M. Ross, human factors for naval marine vehicle design and operation

2. Sabiha A. Wadoo, Pushkin Kachroo, Autonomous underwater vehicles, modelling, control design and Simulation, CRC press, 2011

3. R. Frank Busby, Manned Submersibles, Office of the oceanographer of the Navy, 1976

REFERENCES

1. Ferial L hawry, The ocean engineering handbook, CRC press,2000

2. Richard A Geyer, “Submersibles and their use in oceanography and ocean engineering”, Elsevier, 1997

3.Robert D. Christ,Robert L. Wernli, Sr. “The ROV Manual A User Guide for Remotely Operated Vehicles”, Elsevier, second edition, 2014