SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Department of Marine Engineering	LP: MR18501 Rev. No: 00 Date: 26.7.22
B.E/B.Tech/M.E/M.Tech : Marine Engineering Regulation:2018 PG Specialisation :NA Sub. Code / Sub. Name : MR18501 Ship Construction Unit : I	

Unit Syllabus: Ship Terms: Various terms used in ship construction with reference to ship's parameter e.g. L.B.P. – Moulded Depth – Moulded draught etc – General classification of ships. Stresses in ship's structure: Hogging – Sagging – Racking pounding – panting etc., and Strength members to counteract the same. Sections and materials use: Type of sections like angles – Bulb plates flanged beams used in ship construction – Riveting & Welding testing of welds – Fabricated components.

Objective: To learn and understand the ships terms and stresses in ships.

Session No *	Topics to be covered	Ref	Teaching Aids
1.	Introduction – Ship Construction	1-3	PPT/BB
2.	Basic Design of Ships, Terms used in Ship Construction	1-10 2-12	PPT/BB
3.	Stresses in Ships, Hogging, Sagging, Racking, Pounding & Panting.	1-66 2-15	PPT/BB
4.	Arrangements to resist panting and pounding.	2-73 to 78	PPT/BB
5.	Types of sections, angles, bulb plates, flanged beams.	2-24	PPT/BB
6.	Welding and testing of welds in ship construction.	1-97 2-28 to35	PPT/BB
7.	Weld Welding/faults sequences	1 – 104	PPT/BB
8.	Prefabrication method of construction	1-136	PPT/BB
9.	Types of ships – general, Classification of ships.	2- 1 to 11	PPT/BB

Content beyond syllabus covered (if any):

* Session duration: 50 minutes

SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Sub. Code / Sub. Name: MR18501 / Ship Construction

Unit : II

Unit Syllabus: Bottom & Side Framing: Double bottoms, watertight floors solid and bracket floors – Longitudinal framing keels – side framing like tank side brackets – beam knee – Web frame etc., Shell & Decks: Plating systems for shells – Deck plating & Deck Girders – discontinuities like hatches and other openings – supporting & closing arrangements – mid-ship section of ships. Bulk heads & Deep Tanks: Watertight openings through bulkheads for electric cables pipes and shafting – Deep tank for oil fuel or oil cargo corrugated bulkheads.

Objective: To learn and understand the Primary and Secondary girders used in the ships, shell & deck, bulk head & deep tanks.

Session No *	Topics to be covered	Ref	Teaching Aids
10.	Double Bottom construction	2-41	PPT/BB
11.	Deck, Shell Plating, Girders, Hatches and other opening.	1-209	PPT/BB
12.	Engine Seating	1-72 2-46	PPT/BB
13.	All kinds of primary & secondary members (Eg. Frames, Brackets, Beam knees, Web frames, stringers etc)	2-47	PPT/BB
14.	Bulk Heads, Deep Tanks & Pillars, Corrugated Bulk Heads	2-61	PPT/BB
15.	Water Tight Doors	2-66	PPT/BB
16.	Water Tight Cable Gland	2 – 64	PPT/BB
17.	Ship stabilizers, Bilge keels	2 – 151	PPT/BB
18.	Hatches and Hatch covers	1-215 2-55	PPT/BB
Content beyond syllabus covered (if any):			

* Session duration: 50 mins

SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Sub. Code / Sub. Name: MR18501/ Ship Construction

Unit : III

Unit Syllabus : Fore & Aft End Arrangements: Fore end arrangement, arrangements to resist pounding bulbous bow – Types of sterns stern frame and rudder – Types of rudder – Supporting of rudder – Locking pintle – Bearing pintle – Pallister bearing shaft tunnel – Tunnel bearings.

Objective: To learn and understand the Fore-end and Aft – end arrangements.

Session No *	Topics to be covered	Ref	Teaching Aids
19.	Fore end arrangements – general, Bulbous Bow.	1-226	PPT/BB
20.	After end arrangements, Types of stern frames and construction – general	1-234	PPT/BB
21.	Cruiser stern, Transom stern	1-235/236	PPT/BB
22.	Construction of unbalanced rudder	2-85	PPT/BB
23.	Construction of balanced rudder	2-89	PPT/BB
24.	Construction of Semi balanced rudder	2-91	PPT/BB
25.	Rudder carriers	1-242 2-88	PPT/BB
26.	Stern tube construction	1-243	PPT/BB
27.	Revision		PPT/BB

Content beyond syllabus covered (if any):

* Session duration: 50 mins

SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Sub. Code / Sub. Name: MR18501/ Ship Construction

Unit : IV

Unit Syllabus : Free board and tonnage: Significance and details of markings various international Regulation. Shipyard Practice: Layout of a shipyard – Mold loft – Optical marking – Automatic plate cutting Fabrication assembly etc., Ship Types: Tankers – Bulk Carriers – Container ships – LNG – LPG and Chemical carriers – Lash ships – Passenger ships dredger – Tugs etc., - Constructional details and requirements.

Objective: To learn and expose about the Freeboard and tonnage, Shipyard Practice and ship types.

Session No *	Topics to be covered	Ref	Teaching Aids
28.	Layout of Shipyard	1-111	PPT/BB
29.	Freeboard & Tonnage	1-339 2-123	PPT/BB
30.	Construction of general cargo ships, Construction of passenger ships cattle carriers, fishing vessels	1-15 1-28 2-134	PPT/BB
31.	Construction of bulk carriers	1-22	PPT/BB
32.	Construction of CAR carriers	1-24/290	PPT/BB
33.	Construction of container ships	1-19	PPT/BB
34.	Construction of Oil tankers	1-251	PPT/BB
35.	Construction of LNG, LPG & Chemical tankers	1-264	PPT/BB
36.	Construction of Tugs, Dredgers	NET	PPT/BB
Content beyond syllabus covered (if any):			

* Session duration: 50 mins

SRI VENKATESWARA COLLEGE OF ENGINEERING

COURSE DELIVERY PLAN - THEORY

Sub. Code / Sub. Name: MR18501/ Ship Construction

Unit : V

Unit Syllabus : Off shore Technology: Drilling ships and Platforms – Supply vessels – fire fighting arrangement – Pipe laying ships – special auxiliary service ships. Ship Surveys: Survey rules – Functions of ship classification – Societies – Surveys during construction – Periodical surveys for retention of class.

Objective: To learn and understand about the off shore technology and ship surveys.

Session No *	Topics to be covered	Ref	Teaching Aids
37.	Construction of drill ships and platforms (An introduction to Marine Drilling by Malachlan)		PPT/BB
38.	Construction of diver ships and dynamic positioning system. (Introduction to diving operations offshore by Paul Williams)		PPT/BB
39.	Construction of supply vessels & pipe laying ships.	1-352 2-133	PPT/BB
40.	Structural fire protection in ship construction.	1-352 2-133	PPT/BB
41.	Functions of ship classification societies.	1-36 2-135	PPT/BB
42.	Periodical surveys for retention of class	1-39	PPT/BB
43.	Special surveys, boiler surveys	1-40	PPT/BB
44.	Continuous machinery survey	2-135 to 138	PPT/BB
45.	Revision		PPT/BB

ontent beyond syllabus covered (if any): Diving equipment and systems, Diving physiology

* Session duration: 50 mins

Sub Code / Sub Name: MR 18501/Ship Construction

REFERENCES:

1. D.J. Eyres, "Ship Construction", 4th Edition, Butter worth – Heinemann, Oxford, 1994.
2. E.A.Stokoe, "Reed's Ship Construction for Marine Engineers", 1st Edition, Thomas Reed Publication, London, 2000.
3. A.J. Young, "Ship Construction sketch & Notes", 1st Edition, Butter worth – Heinemann, London,1980.
4. H.J. Pursey, "Merchant Ship Construction", 7th Edition, Brown Son & Ferguson Ltd. GlasGow Great Britain, 1994

	Prepared by	Approved by
Signature		
Name	S.Kalidoss	S.Krishnan
Designation	Professor	Professor & HOD
Date	26.07.22	26.07.22
Remarks *:		

* If the same lesson plan is followed in the subsequent semester/year it should be mentioned and signed by the Faculty and the HOD