University of Mumbai

No. AAMS_UGS/ICC/2023-24/16

CIRCULAR:-

Attention of the Principals of the Affiliated Colleges, the Head of the University Departments and Directors of the Recognized Institutions in Faculty of Commerce & Management is invited to this office circular No. AAMS (UG)/139 of 2021 dated 25th October, 2021 relating to the syllabus of M.Com. (Maritime Studies) (Sem. I to IV) (CBCS).

They are hereby informed that the recommendations made by the Ad-hoc Board of Studies in **Maritime Studies** at its online meeting held on 23rd August, 2022 and subsequently passed by the Board of Deans at its meeting held on 08th December, 2022 **vide** item No. 8.8 (R) have been accepted by the Academic Council at its meeting held on 06th April, 2023 **vide** item No. 8.8 (R) and that in accordance therewith, **revised M.Com. (Maritime Studies) – Sem I to IV (CBCS)** as per appendix has been brought into force with effect from the academic year 2022-23.

(The said circular is available on the University's website www.mu.ac.in).

MUMBAI – 400 032
26th June, 2023

(Prof. Sunil Bhirud)
I/c. REGISTRAR

To

The Principals of the Affiliated Colleges, the Head of the University Departments and Directors of the Recognized Institutions in Faculty of Commerce & Management.

A.C/8.8 (R) /06/04/2023

Copy forwarded with Compliments for information to:-

1) The Dean, Faculty of Commerce & Management,
2) The Chairman, Board of Studies **Maritime Studies**,
3) The Director, Board of Examinations and Evaluation,
4) The Director, Board of Students Development,
5) The Director, Department of Information & Communication Technology,
6) The Co-ordinator, MKCL.

Copy for information and necessary action :-

1. **The Deputy Registrar, College Affiliations & Development Department (CAD),**
2. **College Teachers Approval Unit (CTA),**
3. **The Deputy Registrar, (Admissions, Enrolment, Eligibility and Migration Department (AEM),**
4. **The Deputy Registrar, Academic Appointments & Quality Assurance (AAQA)**
5. **The Deputy Registrar, Research Administration & Promotion Cell (RAPC),**
6. **The Deputy Registrar, Executive Authorities Section (EA)**
   He is requested to treat this as action taken report on the concerned resolution adopted by the Academic Council referred to the above circular.
7. **The Deputy Registrar, PRO, Fort, (Publication Section),**
8. **The Deputy Registrar, Special Cell,**
9. **The Deputy Registrar, Fort Administration Department (FAD) Record Section,**
10. **The Deputy Registrar, Vidyanagari Administration Department (VAD),**

Copy for information :-

1. **The Director, Dept. of Information and Communication Technology (DICT), Vidyanagari,**
   He is requested to upload the Circular University Website
2. **The Director of Department of Student Development (DSD),**
3. **The Director, Institute of Distance and Open Learning (IDOL Admin), Vidyanagari,**
4. **All Deputy Registrar, Examination House,**
5. **The Deputy Registrars, Finance & Accounts Section,**
6. **The Assistant Registrar, Administrative sub-Campus Thane,**
7. **The Assistant Registrar, School of Engg. & Applied Sciences, Kalyan,**
8. **The Assistant Registrar, Ratnagiri sub-centre, Ratnagiri,**
9. **P.A to Hon'ble Vice-Chancellor,**
10. **P.A to Pro-Vice-Chancellor,**
11. **P.A to Registrar,**
12. **P.A to All Deans of all Faculties,**
13. **P.A to Finance & Account Officers, (F & A.O),**
14. **P.A to Director, Board of Examinations and Evaluation,**
15. **P.A to Director, Innovation, Incubation and Linkages,**
16. **P.A to Director, Department of Lifelong Learning and Extension (DLLE),**
17. **The Receptionist,**
18. **The Telephone Operator,**

Copy with compliments for information to :-

19. **The Secretary, MUASA**
20. **The Secretary, BUCTU.**

AC – 06/04/2023
Item No. – 8.8 (R.)

University of Mumbai

Revised Syllabus for M. Com. (Maritime Studies)

Semester – I to IV)

(Choice Based Credit System)

(With effect from the academic year 2022-23)

University of Mumbai

Syllabus for Approval

Sr. No.	Heading	Particulars
1	**Title of Course**	M.Com. (Maritime Studies)
2	**Eligibility**	B.Com., B.Sc., BE, B. Tech. or Equivalent
3	**Duration of Course**	2 Years
4	**Standards of Passing**	As per University of Mumbai rules, statutes and ordinances
5	No. of years/Semesters:	2 Years, 4 Semesters
6	Level:	P.G. / ~~U.G./ Diploma / Certificate~~
7	**Pattern:**	~~Yearly~~ / Semester
8	**Status:**	~~New~~ / Revised
9	**To be implemented from Academic Year :**	From Academic Year: 2022-23

Signature
Chairman Board of Studies

Signature
Dean faculty of Interdisciplinary Studies

Preamble

India is strategically located along the world's busy shipping routes and has a rich maritime culture dating back to Harappan Civilization.

India had a surplus in merchandise trade during early colonial times. The sum total of exports and imports as percentage of GDP was 10% in the 1870s. as compared to an average of 13% in the 1950s and 38% in 2014. The share of maritime trade in country's EXIM is accounting for about 95% of India's trade by volume and over 70% by value.

The Government launched an ambitious Sagarmala Programme in March 2015 for upgradation and expansion of Maritime Infrastructure to supplement growing GDP. The combination of Major and Non-Major ports / Private Ports resembles the Hub & Spoke Model and supplements hinterland development viz. Warehousing, ICD, Dry Ports, etc. for quick & seamless movement of cargoes within country as well as East and West movement using International Sealanes.

Maharashtra has about 720 km coastline, which is at the politico-economic heart of India's total 7,516 km coastline and cater for more than 18% of the traffic at India's Major Ports. Mumbai has two international seaports, the Mumbai Port Trust (MbPT) at Ballard Estate and the Jawaharlal Nehru Port Trust (JNPT) at Nhava-Sheva. Another mega modern port system is being developed Vadhavan Port, Palghar district, north of Mumbai along the coast. New Maritime facilities have come up at Dighi (Raigad) and Jaigad (Ratnagiri) respectively. Major Dockyards like the Mazagon Dock and also Naval Dockyard are also housed in Maharashtra. Mumbai also supplemented with ship breaking yardsat Sewri, Mumbai.

There are also a number of Shipbuilding yards, both in public and private domain, in the jurisdiction of University of Mumbai and its vicinity, such as those based in Ratnagiri and Ghodbundar in Maharashtra, and Shipyards in Goa. More importantly, Mumbai houses the Indian Navy's sword arm the Western Naval Command with a range of organizations such as the Western Fleet, the Maharashtra Naval Area and several key naval/maritime focused entities.

Further, India's Maritime Vision 2030, envisioned in the 2021, recognizes, Maritime sector as a significant employment generator, India's contribution of 10.4% of global maritime trade in FY 2019, we contribute 9.03% of the total seafarers (officers) globally, and more. This makes India's position in the global maritime sector fundamental for international trade. Being part of this growing economy will open doors to many lucrative opportunities.

The proposed interdisciplinary, industry relevant curriculum of M.Com. (Maritime Studies) is following choice based credit system. The programme will provide quality education in subjects

related to growth and development in the national maritime sector, observe an interdisciplinary approach across humanities, law, commerce, management, science and technology to empower students with knowledge, focus and critical thinking skills to address maritime challenges and harness the seas in an inclusive, integrated and holistic manner, now and in the future. The syllabus of these courses are designed to be dynamic and contemporary that will aid concept learning to synergize field work, research with data analysis in both the mini and major project in semester II and IV, respectively. Learner will have to undertake book review assignment in semester I as a prelude to the mini project of semester II. Similarly, learner will undertake the second book review in semester III asa literature survey ground work for the project and dissertation of semester IV. Learners are expected to undertake case study, field work or laboratory experimentation to address contemporary problems and challenges associated with marine and maritime commerce, trade and blue economy. Learners will be encouraged to select projects related to regional and country relevant topics addressing current challenges, problems and provide analyses, find relevant new knowledge and solutions. Learners will be encouraged to select interdisciplinary projects. This will help learners to attain hands-on skills and experiential learning. The book reviews, mini term project and major project with dissertation will enable experiential learning through literature survey, case studies, field work, data collection, data analysis and laboratory experimentations. This programme will educate, train and groom graduates that are not only Industry ready but are also attuned to take on further higher education in research. The programme aims to create empowered human resource to function in the maritime and allied Industry which is expected to witness an upward trajectory with the recent government policies and schemes in this sector. The USP of the programme is that the curriculum has been made comprising inter disciplinary subjects from Humanities, Science and Commerce in addition to core domain subjects of maritime commerce, synergizing and blending learning and training of core and elective subjects. The programme can be executed in blended mode of teaching and learning.

From,

Chairperson (Adhoc BoS of Maritime Studies)

Programme: M.Com. (Maritime Studies)

1. Programme Objectives:

(a) To develop the interest and broaden the understanding of Maritime Industry.

(b) To enhance the understanding of various functions and components of Maritime Commerce including the legal aspects of the industry.

(c) To impart Industry-need based knowledge of Maritime Commerce to enable implementation at work.

(d) To enable students relate to the vast scope of Maritime Economy.

(e) To acquaint the learner about the various aspects of scope of growth of Maritime Industry.

(f) To provide a perfect blend of classical as well as modern aspects Maritime Trade to help students evaluate the progress.

(g) To help students to acquire skills in collection of data and analyse same for creation of designs and further development of the Maritime Industry.

2. Eligibility for Admission.

(a) B.Com degree from any UGC recognized University.

(b) B.Sc degree from UGC recognized University, (Physics, Chemistry, Mathematics, Statistics and any other allied subjects)

(c) B.E. degree from UGC recognized University.

(d) B.Tech degree from UGC recognized University.

(e) Or Equivalent Qualification

(f) Candidates must have secured minimum 50% marks at bachelor's degree. Examination and as per rules of University of Mumbai and Govt. of Maharashtra.

(g) Foreign candidates should have equivalent degrees from foreign Universities recognized by Association of Indian Universities (AIU).

(h) Selection of candidates can be made on the basis of merit and personal interview/Written Aptitude Test (WAT).

3. Intake Capacity. Maximum intake 20

(Continued on next page)

4. Course Structure & Distribution of Credits:

	Paper 1	**Paper 2**	**Paper 3**	**Elective 1**	**Elective 2**
Semester I	Overview of Maritime History Security and Laws	Introduction to Maritime Sciences – Oceanography, Meteorology, Climatology and Ocean Chemistry	Research Methodology	Maritime Infrastructure Management	Sustainable Maritime Transport
Semester II	Overview of International Maritime Trade	Maritime Economy Part I	Maritime Transport	Logistics and Ware Housing	Maritime EXIM Operations
Semester III	Maritime Finance	Maritime Economy Part II	Advanced Maritime Trade	Commercial Ship Management	Vessel Technical Management
Semester IV	Submission of Dissertation on research topic followed by Viva-Voce (24 Credits)				

Book Review/Mini Term Project:

Semester-I	One Book review	08 Credits
Semester-II	One Mini Term Project	08 Credits
Semester-III	One Book Review	08 Credits

One Semester Dissertation based Project:

Semester-IV	Dissertation based R&D Project 24 Credits

Semester I

M.Com. (Maritime Studies) Program for Semester-I consists of four theory courses (3 core and one elective) and one Book Review Assignment. The details are as follows:

Theory Courses (4): 16 hours per week (Each subject will have 4 hours of lecture per week)

Theory Paper	Subject	Lectures (Hrs)	Credits
MMS101	Overview of Maritime History Security and Laws	60	04
MMS102	Introduction to Maritime Sciences – Oceanography, Meteorology, Climatology and Ocean Chemistry	60	04
MMS103	Research Methodology	60	04
MCOMMS 104E	Maritime Infrastructure Management	60	04
MCOMMS 105E	Sustainable Maritime Transport		
Total		**240**	**16**

Book Review term assignment:

Paper Code	**Subject**	**Credits**
MCOMMS BR1	Book Review of one book relevant to the course leading to the final year Dissertation Based R&D Project Work. 16 hours per week library or engagement and mentoring by advisor with end semester report and presentation.	08

Semester II

M.Com. (Maritime Studies) Program for Semester-II consists of four theory courses (3 core and one elective) and one Mini Term Project. The details are as follows:

Theory Courses (4): 16 hours per week (Each subject will have 4 hours of lecture per week)

Paper Code	**Subject**	**Lectures (Hrs)**	**Credits**
MMS201	Overview of International Maritime Trade	60	04
MCOMMS202	Maritime Economy Part I	60	04
MCOMMS203	Maritime Transport	60	04
MCOMMS204 E	Logistics and Ware Housing	60	04
MCOMMS205 E	Maritime EXIM Operations		
Total		**240**	**16**

Mini Term Project:

Paper Code	**Subject**	**Credits**
MCOMMSMP	Mini Term Project. 16 hours per week either of case study, field work, data collection, data analysis, laboratory experimentation leading to Dissertation Based R&D Project Work with end semester report and presentation.	08

Semester III

M.Com. (Maritime Studies) Program for Semester-III consists of four theory courses (3 core and one elective) and one Book Review Assignment. The details are as follows:

Theory Courses (4): 16 hours per week (Each subject will have 4 hours of lecture per week)

Paper Code	Subject	Lectures (Hrs)	Credits
MCOMMS301	Maritime Finance	60	04
MCOMMS302	Maritime Economy Part 2	60	04
MCOMMS303	Advanced Maritime Trade	60	04
MCOMMS304E	Commercial Ship Management	60	04
MCOMMS305E	Vessel Technical Management		
Total		**240**	**16**

Book Review term assignment:

Paper Code	**Subject**	**Credits**
MCOMMSBR2	Book Review of one book relevant to the course leading to the final year Dissertation Based R&D Project Work. 16 hours per week library or engagement and mentoring by advisor with end semester report and presentation.	08

Semester IV: MCOMMSDP - M.Com Dissertation Based Project Work

M.Com.(Maritime Studies) for Semester-IV consists of full term Dissertation Based Research Project of 24 credits. Every student will have to complete a separate project in Semester IV with twenty four credits (600 marks). Students have to prepare and submit a Master level thesis and the final evaluation will be done by external expert and Guide on the bases of the quality of the thesis and Viva-Voce examination.

The candidate shall be awarded the degree of Master of Commerce (Maritime Studies) after completing the course and meeting all the evaluation criteria.

5. Scheme of Examination and Passing:

a) This course will have 40% Internal Assessment (IA) and 60% end semester examination

b) Written examination of 2.5 Hours duration for each course paper at the end of each semester, end semester examinations (ESE) will be conducted by the University as per the existing norms, statutes and ordinances.

c) Internal Assessment - IA (40%) and End Semester Examination (ESE) (60%)- shall have separate heads of passing. For Theory courses, internal assessment shall carry 40 marks and Semester-end examination shall carry 60 marks for each Theory Course.

d) To pass, a student has to obtain minimum 40% marks and above, separately in the IA and end semester examination.

e) The University (external) examination for Theory and term assignments shall be conducted at the end of each Semester and the evaluation of Project work i.e. Mini project and Dissertation, at the end of the forth Semester will be by the external expert and Guide.

f) The candidates shall appear for external examination of 4 theory courses each carrying 60 marks of 2.5 hours duration and each term assignment (Book Review/Mini Term Project) will carry 200 marks at the end of each semester.

g) The candidate shall prepare report and give presentation both book review and mini term project under the guidance of a faculty.

h) Every student will have to complete a separate dissertation based project in Semester IV with twenty four credits (600 marks). Students have to prepare and submit a Master level thesis and the final evaluation will be done by external expert and Guide on the bases of the quality of the thesis and Viva-Voce examination.

6. Standard of Passing for University Examinations:

As per ordinances and regulations prescribed by the University for semester based credit and grading system.

7. Standard point scale for grading:

Grade	Marks	Grade Points
O	80 & above	10
A+	70 to 79.99	9
A	60 to 69.99	8
B+	55 to 59.99	7
B	50 to 54.99	6
C	45 to 49 .99	5

D	40 to 44 .99	4
F (Fail)	39.99 & below	0

Complete Syllabus: Masters of Commerce (Maritime Studies)

Semester 1: Theory Courses

MMS101: Overview of Maritime History, Security and Laws (60 Hours, 04 Credits)

Course Objectives.

1. Acquaint learners about Indian Maritime History from Ancient times till contemporary period.
2. Impart knowledge of Prevailing Maritime Security Scenario in the Indo-Pacific and Indian Ocean Region.
3. Impart knowledge of Geo-Political environment in the Indo-Pacific and IOR.
4. Familiarize learners to the prevailing important International and National Laws and Legislations with respect to Maritime and Marine ecosystem.

Syllabus.

Unit	Course Content	Hours
1	**Ancient India**: Indus Valley Civilisation and trade links with Greeks, Egyptians and other countries. Maritime activity between Indian and Arabian Nations, West and East Asian Countries.	06
2	**Medieval Period**: Maritime Trade and diplomacy during Mauryan Period Expansion of Budhisim through Sea Pandiyan Navy: Sea borne trade and expeditions Chola Navy: Expeditions and relation with Sri Lanka and Southeast Asia Chera Period: Trade and Maritime Activities Gupta Navy	10
3	Trade Between the Arab Counties and the Malabar Coast, religious and cultural influence.	04
4	British, Portugese, Dutch, French Naval Presence and influence in the Indian Ocean	04

5	The Mughal Navy The Zamorin Navy History of Marakkars, The Maratha Navy: Shivaji, Kanhoji, Sambaji, Mysore Navy	04
6	**Contemporary International Relations**: Cold war – rise of super powers, Ideological Bipolarity Military Alliances Arms Race and Nuclear Threat'	04
7	**India and her Neighbours**: Forms of Government, Executive, Legislature and Judicial System Neighbouring Countries and their relationship with India Indian Ocean Region Indo-Pacific Areas of Dispute with particular reference to South Asia International and Regional Organisations like the UNO, OPEC, NAM, EU, League of Arab States, WARSAW Pact, NATO, SAARC, BRICS, ASEAN, SAGAR,FOIP and IPOI. China Strategy of 21st Century Maritime Silk Road.	10
8	**India Foreign Policy and Maritime Diplomacy** UNCLOS Coastal Security, Piracy. Leadership Challenges of Maritime Forces in 21st Century	06
9	**An Overview of Maritime Laws**: Law of Contract The Indian Ports Act, 1908 The Major Port Trust Act, 1963 Carriage of Good by Sea Act, 1925 Merchant Shipping Act, 1958 Customs Act, 1962 Maritime Arbitration and Alternative Dispute Resolution Modes Salvage, International Salvage Convention 1989, of 2000, SCOPIC MARPOL SOLAS and ISPS Code Maritime Labour Convention 2006 Hongkong Convention 2009	12

Recommended Books (Latest Editions):

1. The Timeless Wake by Cmde Odakkal Jonson
2. A World of Nations: The International Order Since 1945 by William R Kaylor
3. Transition to Triumph: History of Indian Navy by VAdm G H Hiranandani
4. Rulers of the Indian Ocean by G A Ballard
5. A Maritime History of India Adm K Sridharan
6. Coastal Security: Maritime Dimensions of India's Homeland Security by Kunwar Rajendra Singh
7. Coastal Security: The Indian Experience by Pushpita Das
8. Role of Coast Guard in the Maritime Security of Indian by Prabhakaran Paleri
9. An Integrated Approach to Coastal and Offshore Defence: Leveraging the Coastal Security by Capt Himadri Das
10. Armed Robbery in Sea in India: Trends and Imperatives by Capt Himadri Das.
11. Coastal Security, Challenges, Concerns and Wayahead by Brig Hemant Mahajan

Course Outcomes:

The learner will be able to acquire knowledge on the following:-

1. Vibrant Maritime History of India from Ancient, Medieval, Colonial, Contemporary Period.
2. Prevailing Security Scenario and Geo-Politics in the Indo-Pacific and Indian Ocean Region.
3. To familiarise and gain basic knowledge on critical International and National Maritime Laws.
4. Would have gained basic knowledge on strategic importance of the Indo-Pacific and IOR.

MMS102: Introduction to Maritime Sciences – Oceanography, Meteorology, Climatology and Ocean Chemistry (60 Hours, 04 Credits)

Course Objectives:

1. To impart basic knowledge and understanding of the Oceanography.
2. To impart knowledge on the Geological characteristics of the Ocean.
3. To acquaint the learner with Ocean Climatology.
4. To familiarise the learner with knowledge on Ocean Chemistry.

Unit	Course Content	Hours
1	**Introduction to Oceanography** a) Geological time scale and major physico-chemical and biological events in Earth's history b) Plate Tectonics and Seafloor Spreading c) Ocean floor morphology d) Introduction to Paleoclimatic studies e) Marine Sediment distribution, classification, sources and dispersal pathways (3 hrs) f) Introductory Marine Geochemistry g) Marine Minerals h) Applications of isotopes for geoscientific studies i) Marine microfossils and their applications with special reference to Quaternary climatology	15
2	**Physical Oceanography and Meteorology**: a) Structure and composition of the atmosphere b) Atmospheric circulation, Asian Monsoon and tropical cyclone c) Surface heat budget of the ocean d) Physical properties of sea water and their distribution, light and sound propagation in sea water e) Water masses and thermohaline circulation f) Indian Ocean circulation g) Oceanic processes: Upwelling/sinking and meso-scale eddies h) Oceanic processes: ENSO and IOD i) Wave generation, growth and decay j) Generation of tides, Semi-diurnal and diurnal tides, tidal constituents	15
3	**Biological Oceanography**: a) General microbial ecology b) Measurement of primary production c) Benthic-Pelagic coupling , Benthic ecology, Benthic biomass structure and production d) Fisheries oceanography e) Plankton carbon cycling f) Introduction to suboxic and anoxic oceanography, Dynamics of DOM under anoxic conditions	12

	g) Food web dynamics and climate change h) Biofouling/Bioinvasion i) Zooplankton and phytoplankton j) Fishery biology	
4	**Ocean Chemistry**: a) Elemental composition of seawater and behaviour of substances b) Chemical speciation in seawater c) Major marine biogeochemical cycles d) Marine biogenic gases of climatic importance e) Global Climate Change and ecosystem impacts f) Exchange of materials across marine interfaces g) Sampling and analytical tools in chemical oceanography	06
5	**Ocean Climatology** a) Climate classification b) Greenhouse gases: Introduction, causes of changing concentration, role in climate change c) Cryosphere and its role in climate change d) Energy Balance of the Earth and atmosphere e) Ocean-climate linkage	06

Recommended Books (Latest Editions)

1. Essential of Oceanography, by Trujillo/ Thurman (6 January 2015)
2. Oceanography: An Invitation to Marine Science, by Tom Garrison (31 July 2012)
3. Essentials of Meteorology: An Invitation to the Atmosphere by C. Donald Ahrens
4. Meteorology Today: An Introduction to Weather, Climate, and the Environment by Robert Henson, C. Donald Ahrens

Course Outcome:

The learner will be able to acquire knowledge on the following:-

1. Understand the Topography and Oceanography .
2. Effective Ocean influence on the climate.
3. Understand and acquire knowledge on Ocean Chemistry
4. Understand the various dynamics of Ocean Meteorology.

MMS103: Research Methodology (60 Hours, 04 Credits)

Course Objectives:

1. To impart knowledge on the process of Research Paper Writing.
2. To acquaint the learner with the indept knowledge on the various methods involved in carrying out research.
3. The learner will be imparted knowledge on the steps of carrying out focused research.

Unit	Course Content	Hours
1	Research Methodology: An Introduction Meaning of Research Objectives of Research Motivation in Research Types of Research Research Approaches Significance of Research Research Methods versus Methodology Research and Scientific Method Importance of Knowing How Research is Done Research Process Criteria of Good Research Problems Encountered by Researchers in India	08
2	Defining the Research Problem What is a Research Problem? Selecting the Problem Necessity of Defining the Problem Technique Involved in Defining a Problem	06
3	Research Design Meaning of Research Design Need for Research Design Features of a Good Design Important Concepts Relating to Research Design Different Research Designs Basic Principles of Experimental Designs	06

4	Methods of Data Collection Collection of Primary Data Observation Method96Interview Method Collection of Data through Questionnaires Collection of Data through Schedules Difference between Questionnaires and Schedules Some Other Methods of Data Collection Collection of Secondary Data	08
5	Processing and Analysis of Data Processing Operations Some Problems in Processing Elements/Types of Analysis Statistics in Research Measures of Central Tendency Measures of Dispersion Measures of Asymmetry (Skewness) Measures of Relationship Simple Regression Analysis Multiple Correlation and Regression Partial Correlation Association in Case of Attributes	08
6	Sampling Fundamentals Need for Sampling Some Fundamental Definitions Important Sampling Distributions Central Limit Theorem Sampling Theory Sandler's A-test Concept of Standard Error Estimation Estimating the Population Mean ()μ Estimating Population Proportion Sample Size and its Determination Determination of Sample Size through the Approach Based on Precision Rate and Confidence Level Bayesian Statistics	08

7	Testing of Hypotheses What is a Hypothesis? Basic Concepts Concerning Testing of Hypotheses Procedure for Hypothesis Testing Flow Diagram for Hypothesis Testing Measuring the Power of a Hypothesis Test Tests of Hypotheses Important Parametric Tests Hypothesis Testing of Means Hypothesis Testing for Differences between Means Hypothesis Testing for Comparing Two Related Samples Hypothesis Testing of Proportions Hypothesis Testing for Difference between Proportions Hypothesis Testing for Comparing a Variance to Some Hypothesized Population Variance Testing the Equality of Variances of Two Normal Populations Hypothesis Testing of Correlation Coefficients Limitations of the Tests of Hypotheses Important Nonparametric or Distribution-free Test Relationship between Spearman's r's and Kendall's W Characteristics of Distribution-free or Non-parametric Tests	08
8	Interpretation and Report Writing Meaning of Interpretation Why Interpretation? Technique of Interpretation Precaution in Interpretation Significance of Report Writing Different Steps in Writing Report Layout of the Research Report Types of Reports Oral Presentation Mechanics of Writing a Research Report Precautions for Writing Research Reports	08

Recommended Books (Latest Editions):

1. Research Methodology Methods and Techniques by C.R.Kothari, Gaurav Garg, New Age International Publishers

Methodology of Research in Social Science by O.R. Krishnaswami and M. Ranganatham, Himalaya Publishing House

Course Outcomes:

The learner will be able to understand and carry out the following:-

1. Identify the research problem, formulation of hypothesis, carryout data analysis using systematic and scientific methods.
2. Formulate the Research Process and arrive at the conclusion and recommendations in a logical manner.
3. Understand the need of Proper Research Writing.
4. Carryout a systematic and logical Research towards writing the term mini project conduct and report, Book review and Dissertation.

MCOMMS104E - Maritime Infrastructure Management (60 Hour, 04 Credits)

Course Objectives

To impart knowledge on the management of maritime infrastructure in ports and inland depots.

Unit	Course Content	Hours

1	Port Infrastructure a. Waterside b. Yard c. Landside	4
2	Traditional Port functions and its evolution as hub for economic activity	3
3	Multiplier Effect on Regional Economy	3
4	Port Connectivity: CFS/ICD/Dry Ports	2
5	Rail and Road connectivity to ports	2
6	Hub Ports and Feeder Ports	3
7	Port Tariffs and economics	2
8	World Bank Model for Port Development and Management	2
9	Global experience in different models	3
10	Global & Domestic Port Regulatory System- IMO/ ISPS	4
11	Agencies involved in Port Activities / Ancillary Services	3
12	Private Sector Participation in Ports- Model Concession Agreement and its variants.	3
13	Terminal Operating System & Port Operating System (IT & Technology solutions)	2
14	Smart Ports/ Fully Automated Terminals	3
15	Inland Water Transport & integration with EXIM/ Domestic Cargo Movement	4
16	Multi Modal Hubs	2

17	Case Study · Concepts of port management · Challenges in coastal sea trade · Comparative Study of Port Management: India & Global · Traditional vs futuristic use of Inland Waterways · Different Models of Port Tariff fixation: a critical analysis	15

Recommended Books (Latest Editions)

1. Port Management and Operations by Maria G. Burns
2. Port Business by Jurgen Sorgenfrei
3. Maritime Logistics: A Guide to Contemporary Shipping and Port Management - 2nd Edition, by Dong-Wook Song (Editor), Photis M. Panayides (Editor)
4. Port Management and Operations - 1st Edition, by Maria G. Burns (Author)
5. Port Management and Operations (Lloyd's Practical Shipping Guides) 3rd Edition, by Patrick Alderton (Author)
6. Ports and Terminals – Sep 2012, by H. Ligteringen (Author), H. Velsink (Author)

Course Outcomes

1. The students will have deeper understanding of the World Bank suggested Model for PPP in the Maritime domain.
2. Improved understanding of the Service level expectations from various stakeholders in the SCM.
3. Setting up of Logistics entities by professionals thereby increasing the share of organised activity which at present is mostly in the domain of unorganised sector.
4. Increased opportunities for Indian students in the global Supply Chain Market.

MCOMMS105E - Sustainable Maritime Transport (60 Hours, 04 Credits)

Course Objectives

To impart advanced knowledge on the sustainability model of maritime transport for growth.

Unit	Course Content	Hours

1	Environment Sustainability a. Identification of Key Environmental Impact Indicators (KEIIs) b. Mitigation of detrimental effects on Environment c. Use of Clean Energy & Bio fuels d. Potential of Hybrid Energy Technology to reduce Emissions e. Impact on Atmosphere and Climate	5
2	Marine Pollution & Regulation Governing (MARPOL etc) a. Ship's Ballast Water exchange - In Port and At sea b. Global Emission Control Areas	4
3	Efficient Movement of Freight a. Cost per ton per mile b. Delays and losses	4
4	Supply Chain Management a. Components of Supply Chain b. Challenges in supply chain	4
5	Ship Management & its significance a. Effect of good ship management on Trade sustainability b. Ship management related industries and services	4
6	Marine Routing and Speed Optimization a. Performance Measures for Marine Transportation b. Weather and Current based routing	3

7	Green Shipping Practices a. Concept, Adoption and Implications b. Resource, Conservation and Recycling c. Garbage Management and its advantages	4
8	Aids to Navigation a. Basics of navigation b. Need for aids to navigation c. Risks in case of non-operational aids	5
9	Oceanographic, Hydrographic and Meteorological Services	4
10	Innovations and Technology	4
11	Ship Recycling	4
12	Case Study · Comparison study of Cost per ton per mile in India vs Germany · International Garbage management regulations and availability of disposal resources in India · Most profitable futuristic shipping activity · Status of compliance of regulations related to ship recycling	15

Recommended Books (Latest Editions)

1. Sustainable Maritime Transportation and Exploitation of Sea Resources 1st Edition, by Enrico Rizzuto (Editor), Carlos Guedes Soares (Editor)
2. Sustainable Shipping A Cross-Disciplinary View, Editors: Psaraftis, Harilaos N. (2019 Ed.)

Course Outcomes

The learner should be able to:

1. Define what is Maritime sustainability
2. Explain what are the factors to build the sustainability
3. Interpret efficient ship management
4. Critically evaluate Green Shipping and Technological innovation

MCOMMSBR1 - Book Review term assignment (08 Credits)

Course Objectives - Book Review of one book relevant to the course leading to the final year Dissertation Based R&D Project Work. 16 hours per week library or engagement and mentoring by advisor with end semester report and presentation.

Course Outcome - Book review with report and presentation will assist learner to gain in depth knowledge on specific topic and gain understanding of research undertaken in that area with an overview on the new knowledge generated.

Semester II

MMS201 - Overview of International Maritime Trade (60 Hours, 04 Credits)

Course Objectives

To impart fundamental knowledge on the maritime trade, commerce and logistics and functions of the various components of maritime commerce.

Unit	Course Content	Hours
1	History of Maritime Trade	4
2	Basic Concepts and Geographies of Maritime Trade	5
3	Basics Concepts & Principles of Seaborne Trade	4
4	Types of Commodities Internationally Traded	4
5	Commercial Origins	4
6	Trades due to differences in Natural Resources	4
7	Trade Theory & Principle Drivers of Trade a. Demand and Supply	6
8	Types of Cargoes and their means of carriage	9
9	Ship Design & Technical Parameters - Bulk / Liquid Bulk / Gas (LPG, LNG, Ammonia) / Crude & CPP - Break Bulk :Types of Break Bulk Cargoes and their Characteristic - Automobiles / Project Cargoes - Cruise and Passenger	6+8
10	Maritime Vocabulary – On board and in Business	2
11	Commodity Trade Cycles & Trends	4

Recommended Books (Latest Editions)

1. Maritime Economics, By Martin Stopford (3rd Edition)
2. Port Economics (Routledge Maritime Masters), By Wayne K. Talley
3. The Handbook of Maritime Economics and Business, By Costas Grammenos
4. The Business of Shipping, By Ira Breskin

Course Outcomes

The learner should be able to:

1. Describe what is Maritime Trade
2. Demonstrate how it is governed by geographical distribution of resources and consumers
3. Differentiate types of marine transport crafts based on commodity
4. Construct and explain a trade cycle and its importance

MCOMMS202- MARITIME ECONOMY PART 1 (60 Hours, 04 Credits)

Course Objectives

To impart fundamental knowledge on the Maritime Economy in the present day and the huge future prospects.

Unit	Course Content	Hours
1	Maritime Economy And Impact On National Economy	4
2	Maritime Economy And Impact On World Economy.	4
3	Shipping Ports And Maritime Logistic Coastal Shipping & Inland Water Transportation	6
4	Evolution of Ports / Maritime Clusters Drivers for Port Business	4
5	Deep Sea Mining	4
6	Oil And Gas Exploration	4
7	Deep Sea Fishing - Prospects and Limits	6
8	Marine Manufacturing	3
9	Marine Renewable Energy	4
10	Marine Tourism - International and Domestic	6

11	Marine Biotechnology	4
12	Marine Research	4
13	Territorial Waters And Economic Zones a. EEZ b. SEZ c. FTWZ	3
14	Ocean Monitoring And Surveillance	4

Recommended Books (Latest Editions)

1. Maritime Economics, By Martin Stopford (3rd Edition)
2. Port Economics (Routledge Maritime Masters), By Wayne K. Talley
3. The Handbook of Maritime Economics and Business, By Costas Grammenos
4. The Business of Shipping, By Ira Breskin

Course Outcomes

The learner should be able to:

1. Recognize the vast expanse of maritime industry.
2. Interpret the workings of various Maritime segments.
3. Compare how various segments can contribute to maritime economy.
4. Construct the link of maritime industry with other industries to enhance maritime economy

MCOMMS203 - Maritime Transport (60 Hours, 04 Credits)

Course Objectives

To impart fundamental knowledge on Maritime Transport and functions of the various components of maritime transport.

Unit	Course Content	Hours
1	History a. Movement of men & goods	3

	b. Navigation	
2	Role of Maritime Transporting Global Trade & Economy a. Maritime Trade Routes b. Time difference across countries	4
3	Evolution of Ports / Maritime Clusters a. Functions of Port	4
4	Regulatory Set up a. Global b. Indian Maritime Administration	3
5	Maritime Infrastructure Management a. BOOST b. Smart Ports c. Port Terminal Operations d. Stakeholders e. Tariffs	4
6	Shipping a. Evolution of Ships & their Types b. Registries c. Ship Management d. Indian Shipping	5
7	Types of Cargoes and Ships for carriage	4
8	Logistics a. Multi Modal Transport b. Emergence of 3PL/4PL c. Total Logistics Cost/Logistics Price Index	4
9	Coastal Shipping & Inland Water Transportation	3
10	Warehousing & Cold Storage a. Warehouse Management System b. Agri Logistics c. Retail d. E-Commerce	4

11	Sustainability in Maritime a. Green Ports b. Clean Fuel for Ships	3
12	Emerging Trends a. Sagarmala b. Multiplier Effect on Economy	4
13	Site Visits to Port, CFS, Warehouse & Cold Storage	15

Recommended Books (Latest Editions)

1. Ninety Percent of Everything, by Rose George
2. The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger by Marc Levinson
3. Port Management and Operations by Maria G. Burns
4. Port Business by Jurgen Sorgenfrei
5. The Shipping Man by Matthew McCleery

Course Outcomes

1. The students will be able to better appreciate the importance of Maritime Industry as a service provider to Global Economic activity.
2. Understand the relationship between Ship, Port & Hinterland and their interdependence.
3. Appreciate the emerging trends in the Maritime domain including the future technologies.
4. Since the sector does not have any Entry barriers, many start-ups and even Single Owner enterprises can emerge.
5. Better value can be created for the Agri-produce through setting up of efficient Agri-Logistics or Cold Chain infrastructure in the country.

MCOMMS204E – Logistics and Ware Housing (60 Hours, 04

Credits)Course Objectives

To impart practical knowledge on Supply Chain Logistics and importance and usage of Warehouses and Cold Storage in Maritime Industry.

Unit	**Course Content**	**Hours**

1	EXIM and Domestic Economy a. GDP and cargo movement b. Products and Places	4
2	Transport Corridor- Logistics Corridor-Economic Corridor	3
3	Evolution of Logistics industry	3
4	Overview of global logistics industry	3
5	Integrated Logistics	3

6	Logistics Performance Index	2
7	Logistics Cost in India a. Factors shaping Indian Logistics	4
8	Concept of 3PL/4PL Service Providers	2
9	Retail & Supply Chain	3
10	Emergence of Warehouse infrastructure	4
11	Warehousing Industry in India	3
12	Changing role of Warehouses	2
13	Agriproducts & Cold Storage	3
14	Medical Products and Cold Storage	3
15	Warehouse Management System	3
16	Case Study Evolution of Warehousing in the World Availability and need for Cold Storage in India Product price movement from source to the retailer	15

Recommended Books (Latest Editions)

1. Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse (3rd Edn), By Gwynne Richards
2. The Definitive Guide to Warehousing: Managing the Storage and Handling of Materials and Products in the Supply Chain (3rd Edn), By Council of Supply Chain Management Professionals, Scott Keller, Brian Keller
3. The Warehouse Management Handbook (2nd Edn), By James A. Tompkins & Jerry D. Smith
4. Lean Supply Chain And Logistics Management – By Paul A Myerson

Course Outcomes

The learner should be able to:

1. Classify Export and Import Commodities
2. Demonstrate understanding of Logistics and basic supply chain
3. Examine Factors contributing to Logistics cost
4. Value Importance of adequate Warehousing and Cold Storage facilities

MCOMMS205E - Maritime EXIM Operations (60 Hours, 04 Credits)

Course Objectives

To impart knowledge on the various export import operations in port, with agencies involved and their functions.

Unit	Course Content	Hours
1	Agency - Port Operations a. Cargo & Stevedoring b. Inward and Outward Port clearances c. Lighthouse and Port dues d. Port Health e. Inspections	6

2	Agency – Husbandary Services a. Crew change b. Owner supplies c. Cash to Master	4
3	Agency - Sales and Marketing	3
4	Agency – Documentation a. Import b. Export	3
5	Principal Reporting	3
6	Custom House Agents a. Guidance and consultancy on pre and post shipment services b. Liasoning and follow up with various Govt Organisations c. Documentation procedures i.e. preparation and handling of documents d. All post shipment formalities and endorsements e. Drawback/DEPB and several other export benefits	8
7	Freight forwarding a. NVOCC b. Full-container-load (FCL) c. Less-than-container-load (LCL) d. Dry or liquid bulk shipments e. Full or partial vessel charters, including refrigerated service or on-board cranes to handle heavy shipments f. Physical cargo and paper-consolidation programs to importers and exporters	10
8	Sea Freight Services a. Temperature Controlled Transportation b. Cargo Insurance c. Letter of Credit Processing (LC) d. Certification and Legalisation of Documents e. Food and Drug Administration Filing (FDA) f. Advanced Cargo Information Filing (ACI) e. Dangerous Goods Handling (DGR)	8

9	Case Study Flow chart for vessel inward clearance into port Create instruction chart for Custom Clearance procedures Roles and responsibilities of a NVOCC	15

Recommended Books (Latest Editions)

1. A Complete Guide to Letter of Credit and the UCP – Jan 2015, by Rupnarayan Bose (Author)
2. International Trade Finance Paperback, by Indian Institute of Banking & Finance (Author)
3. International Trade Logistics, by Ram Singh (Author)
4. Export Business-A Beginner's Guide: A practical guide for starting export business, by Raj Kumar Sharma (Author)
5. Export Import Management, by Parul Gupta (Author)
6. IBO-4 Export Import Procedures And Documentation, by Sudhir Kochhar (Author)

Course Outcomes

The learner should be able to:

1. Explain Maritime Agent's role in ports.
2. Demonstrate the Role of Freight Forwarders in Container Trade.
3. Differentiate the Roles of Custom House Agents and Ship Agent in port.
4. Develop a scheme to explain types of services in port related to ship arrival / departure.

MCOMMSMP - Mini Term Project (08 Credits)

Course Objectives - Mini Term Project. 16 hours per week either of case study, field work, data collection, data analysis, laboratory experimentation leading to Dissertation Based R&D Project Work with end semester report and presentation.

Course Outcome – After successful completion of the Mini Term Project the learner can demonstrate, analyse, compare, evaluate subject data and can develop aptitude in field work, data collection, problem analysis and solving using technical and statistical concepts.

Semester III

MCOMMS301 - Maritime Finance (60 Hours, 04 Credits)

Course Objectives

To impart fundamental knowledge on Maritime Finance and functions of the various components.

Unit	Course Content	Hours
1	Economic Drivers	6
2	Asset Financing a. New building & purchase Financing b. Retro fitting Financing c. Resale Finance	6
3	Introduction to Vessel Ownership a. Capital cost b. Operating Cost c. Technical cost d. Manning cost e. Certification f. Insurance g. P&I Club	10
4	Cargo Trade Financing a. FOB b. CFR	6
5	Bank Transaction a. Bill of lading b. Letter of credit movement c. Incoterms d. Uniform Customs and Practices for Documentary Credits	6
6	Digitization in Finance	4
7	Financing Scheme a. Banks b. Private Equity	6

	c. Capital Market	
8	Risk analysis, mitigation & forecasting	6
9	Case study a. Bank – Owner relationship b. Owners – Freight Charterer relation ship	10

Recommended Books (Latest Editions)

1. The International Handbook of Shipping Finance: Theory and Practice Hardcover – Import, 23 November 2016
2. HSBA Handbook on Ship Finance
3. Shipping Finance, Stephenson Harwood
4. Shipping Finance: A Practical Handbook, Stephenson Harwood

Course Outcomes

The learner should be able to:

1. Understand the Maritime Value Chain
2. Understand the process of Capital raising & Cost factors involved
3. Execute Trade Financing
4. Analyse & Select appropriate Asset Financing product
5. Analyse Risk & evaluate mitigation
6. Apply Banking Practises in Commercial Environment

MCOMMS302 - Maritime Economy – Part 2 (60 Hours, 04 Credits)

Course Objectives

To impart advanced knowledge on the maritime economy and the huge growth prospects.

Unit	Course Content	Hours
1	Maritime economy and impact on world economy. a. Terminology b. Definition. c. Ocean monitoring	4

2	Marine fishery, aquaculture and fish processing. a. Aquaculture and technology b. Seafood processing c. Fish Farming	5
3	Deep seabed mining a. Exploration of rare earth metals b. Hydrocarbons – oil & gas c. Exploration of freshwater	6
4	Marine biotechnology a. Seaweed harvesting b. Seaweed products c Marine derived bio products d. Latest Research and Development	5
5	Marine renewable energy a. Wave energy b. Off shore wind energy c. Alternate energy source	4
6	Marine manufacturing a. Boat manufacturing b. Net manufacturing c. Yard infrastructure and ship building d. Ship repair infrastructure e. Marine industrial engineering	6
7	Shipping ports n maritime logistics a. Port Navigation safety b. Terminals & Jetties c. Pilot and Tugs d. Vessel Traffic Services e. Stevedoring Services	5

8	Marine tourism a. International and Domestic Cruise b. Lighthouse tourism c. Sailing at sea d. Water/ Jet skiing e. Scuba diving f. Beach / Floating hotel and restaurant	6
9	Ocean monitoring and surveillance a. Coastal protection b. Ocean health challenges c. Habitat protection and restoration d. Protection of National resources	4
10	Case Study Marine Tourism Project Fish Farming Project Marine renewable energy Growth of Ship Building in India compared to the World Comparison of advantages and disadvantages over land and sea transport	15

Recommended Books (Latest Editions)

1. The Blue Economy Of Andhra Pradesh: The Road To Prosperity, by Prof. Kodati Viyyanna Rao
2. Marine Renewable Energy: 4 (Commonwealth Blue Economy Series), by Commonwealth Secretariat
3. Preparing a Workforce for the New Blue Economy: People, Products and Policies, by Liesl Hotaling and Richard W. Spinrad
4. Blue Economy-10 Years, 100 Innovations, 100 Million Jobs, by Gunter Pauli

Course Outcomes

The learner should be able to:

1. Explain effect of Maritime economy on Indian and world economy in general
2. Demonstrate the value Expanding Blue economy
3. Examine how Trade and Commerce affects the Economy
4. Investigate how various modes of harvesting surface / in water / and undersea bed helps the economy.

MCOMMS303 – ADVANCED MARITIME TRADE (60 Hours, 04 credits)

Course Objectives

To impart advanced knowledge on the Maritime Trade and its functions.

Unit	Course Contents	Hours
1	Recap of Basics of Maritime Trade a. Geographies of Maritime Trade b. Concepts & Principles of Seaborne Trade c. Commodities Internationally Traded d. Theory & Principle Drivers of Trade	6
2	Advanced Ship Design & Technical Parameters - Bulk / Liquid Bulk / Gas (LPG, LNG, Ammonia) / Crude & CPP - Break Bulk :Types of Break Bulk Cargoes and their Characteristic - Automobiles / Project Cargoes - Cruise and Passenger	4
3	Commodity Trade Cycles & Trends	4
4	Principles of Carriage - Major Trade Lanes / Cargo Flows	4
5	Interrelation between Trade Commerce and Industry	4
6	Baltic and Other Global Indexes (Henry hub, JKM etc.)	3
7	Price Indexing and Trends	3
8	Data Mining and Analytics	3
9	Block Chain concepts and its applications to International Trade	4
10	Trade Management & Regulators	4
11	Economics of Ship Building and Ship Demolition	6
12	Principles of FOB, DES, Long Term and Spot Trades	3

13	Case Study – Economics of Ship Building and Ship Demolition – future prospects OR Commodity Trade Cycles & Trends – future prospects	12

Recommended Books (Latest Editions)

1. Maritime Economics, By Martin Stopford (3rd Edition)
2. The Handbook of Maritime Economics and Business, By Costas Grammenos
3. The Business of Shipping, By Ira Breskin
4. How Maritime Trade and the Indian Subcontinent Shaped the World: Ice Age to Mid-Eighth Century, by Nick Collins
5. Gale Force 10: The Life and Legacy of Admiral Beaufort, by Nicholas Courtney
6. Ship-building and Navigation in the Indian Ocean Region, AD 1400-1800, by K. S. Mathew
7. Trade, Commodities and Shipping in the Medieval Mediterranean (Variorum Collected Studies), by David Jacoby
8. Structured Trade and Commodity Finance: Practical Applications in Complex Transactions, by Howard Palmer and Y. Matlach

Course Outcomes

The learner should be able to:

1. Classify Sea borne Trade on the basis of commodity.
2. Differentiate between Product based Ship design
3. Appraise the Baltic and Other Global Index
4. Design Block Chain concepts for innovative growth.

MCOMMS304E - Commercial Ship Management (60 Hours, 04 Credits)

Course Objectives

To impart knowledge on Commercial Shipping including Charters, Operations, Maritime Contracts, Dispute Handling, etc.

Unit	**Course Content**	**Hours**
1	Types of charters a. Time b.Voyage c. Bareboat d.Period	4

2	Chartering a. Freight Discovery b. Worldscale c. Due diligence prior fixing d. Port Restrictions e. Cargo Intakes f.Vessel readiness & cargo worthiness g. Trade Practices h. Dry/Wet/LNG/Container/Car Carrier models i. Formation of Contract J. Fuel economics & bunker management	8
3	Operations a. Commercial execution b. Cargo & Bunker Plan c. Vessel Performance monitoring d. Port Cost Analysis (Port Disbursement analysis) e. Break Bulk Cargo f. Hold preparation g. Commercial Vessel upkeep & Underwater management h. Route Planning i.Notice of readiness / delivery / redelivery	8
4	Vessel Inspections regimes and Approvals a. SIRE b. CDI c. BHP d. PSC	4
5	Maritime contracts a. Charter Party Nype b. Charter Party Gencon c. Charter Party Amwelsh Coal d. Shell time, BP Voy e. Bill of lading	4

6	Introduction a. Baltic b. Bimco c. Hague, Hague Visby, COGSA rules d. Q88 / Rightship	6
7	Operational Legal disputes & resolutions a. Cargo damage b. Stevedore damage to vessel c. Third Party Damage d. Performance claims e. Breach of CP / Damage claims f. Demurrage and Dispatch	6
8	Typical cargoes & trade routes	5
9	Case Studies a. Cargo Intakes b. Bunker Intakes c. Port Cost Analysis (Port Disbursement analysis) d. Demurrage and Dispatch e. PSC Observation Codes	15

Recommended Books (Latest Editions)

1. BP Tankers: A Group Fleet History, by Bill Harvey and Dr. Raymond Solly
2. Structured Trade and Commodity Finance: Practical Applications in Complex Transactions, by Howard Palmer and Y. Matlach
3. Ninety Percent of Everything, by Rose George
4. The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger by Marc Levinson
5. A Complete Guide to Letter of Credit and the UCP, by Rupnarayan Bose (Author)
6. International Trade Finance, by Indian Institute of Banking & Finance (Author)

Course Outcomes

The learner should be able to:

1. Understand the Trade & limiting factors
2. Analyse the Charter Party Contractual obligation
3. Execute End to End Controlled Operations
4. Critically weigh various Trade practise & regulation
5. Evaluate Disputes and select between commercial vs legal resolutions

6. Formulate Process for Freight Discovery & Due diligence

MCOMMS305E - Vessel Technical Management (60 Hours, 04 Credits)

Course Objectives

To impart fundamental knowledge on how Commercial ships are manned and operated.

Unit	Course Content	Hours
1	Technical Management – Ship Safety and Operations	3
2	Technical Management – Safety Manuals and Compliance	3
3	Technical Management – Maintenance and Upkeep of ships Vessel cranes, pumps, IG plant & Hatch cover (etc)	3
4	Technical Management – Owner managed ships	2
5	Technical Management – 3rd Party Technical Management	3
6	Technical Management – Ship Manning Budgets	2
7	Technical Management – Ship Maintenance Budgets	3
8	Technical Management – Supplies for ship operations a. Bunker Specs & Qualities b. Fresh Water c. Spares d. Stores	3
9	Technical Management – On Hire / Off Hire Clauses	3
10	Manning – Crew Certification & Training	2
11	Manning – Induction, Appraisal and Growth	3
12	Manning - Crew Bank / database	3

13	Manning – Medical, Safety & Insurance	2
14	Manning – Placement onboard	2
15	Manning – Wages management & Collective Bargain Agreement	2
16	Manning – Crew Social Well Being	3
17	Manning – Local & International regulation compliance	2
18	Manning – Grievance Handling & Whistle Blower Policy	2
19	Case Study – Ship Operation Budgeting Shipping Manning Budgeting Crew Certification Matrix Understanding Basics of ISM Code Study on Common Ship Supplies	15

Recommended Books (Latest Editions)

1. The British Mariner's Vocabulary; Or Universal Dictionary of Technical Terms and Sea Phrases Used in the Construction, Equipment, Management and Military Operations of a Ship, by J J Moore
2. Marine Engineering Journal: Ship Technical Maintenance Operating Management Procedure - Complete Repair Planning Schedule Book & Safety Guide -Health ... Room Checklist & Daily Routine Score Log, by Jason Soft
3. The Art of Maritime Manning - My Insights, by Dr Binay Singh
4. STCW Code
5. ISM Code
6. ISPS Code

Course Outcomes

The learner should be able to:

1. Understand the technical limitations & capabilities of ships.
2. Evaluate Roles & responsibilities of technical managers.
3. Evaluate vessel operating budgeting
4. Value the Human Element in manning services.
5. Weigh Crew Safety & international regulations vs commercial obligation

MCOMMSBR2 - Book Review term assignment (08 Credits)

Course Objectives - Book Review of one book relevant to the course leading to the final year Dissertation Based R&D Project Work. 16 hours per week library or engagement and mentoring by advisor with end semester report and presentation.

Course Outcome - Book review with report and presentation will assist learner to gain in depth knowledge on specific topic and gain understanding of research undertaken in that area with an overview on the new knowledge generated.

Semester IV

MCOMMSDP - M.Com Dissertation Based Project Work (24 Credits)

Course Objectives

M.Com.(Maritime Studies) for Semester-IV consists of full term Dissertation Based Research Project of 24 credits. Every student will have to complete a separate project in Semester IV with twenty four credits (600 marks). Students have to prepare and submit a Master level thesis and the final evaluation will be done by external expert and Guide on the bases of the quality of the thesis and Viva-Voce examination.

Course Outcome – After successful completion of **MCOMMSDP - M.Com Dissertation Based Project Work** the learner can demonstrate, analyse, compare, evaluate subject data and can develop aptitude in field work, data collection, problem analysis and solving using technical and statistical concepts.

Recommended Journals:

1. Seaways
2. IMEI Engineering Journals
3. EXIM Trade Journals
4. Journal of International Maritime Safety, Environmental Affairs, and Shipping
5. Maritime Affairs: Journal of the National Maritime Foundation of India