

Annexure-I
Curriculum for MBA Shipping & Logistics

Semester I

Exam Slot	Course No.	Course Name	L-T-P	Internal Marks	End Semester Marks	Exam Duration (hours)	Credits
A	20MBA101	Introduction to Business	3-0-0	40	60	3	3
B	20MBA103	Quantitative Techniques for Managers	4-0-0	40	60	3	4
C	20MBA105	Organizational Behaviour	3-0-0	40	60	3	3
D	20MBA107	Business Economics	4-0-0	40	60	3	4
E	20MBA109	Information Systems for Managers	3-0-0	40	60	3	3
F	20MBA111	Accounting for Managers	4-0-0	40	60	3	4
G	20MBA113	Ethics, Governance and Corporate Responsibility	3-0-0	40	60	3	3
H	20MBA115	Legal Systems for Business	3-0-0	40	60	3	3
	20MBANC1	Employability Enhancement Programme	0-0-2				
		Total	27-0-2				27

Semester II

Exam Slot	CourseNo.	CourseName	L-T-P	Internal Marks	End Semester Marks	Exam Duration (hours)	Credits
A	20MBA102	Marketing Management	4-0-0	40	60	3	4
B	20MBA104	Financial Management	4-0-0	40	60	3	4
C	20MBA106	Human Resource Management	3-0-0	40	60	3	3
D	20MBA108	Operations Management	3-0-0	40	60	3	3
E	20MBA110	Operations Research	4-0-0	40	60	3	4
F	20MBA112	Research for Managerial Decisions	3-0-0	40	60	3	3
G	20MBA114	Entrepreneurship Development	3-0-0	40	60	3	3
	20MBANC2	Integrated Disaster Management	1-0-1				
		Total	25-0-1				24

MBA Summer Internship[#] outside the College: (6 Weeks to 8 Weeks)

Semester III

Exam Slot	Course No.	Course Name	L-T-P	Internal Marks	End Semester Marks	Exam Duration (hours)	Credits
A	20MBA209	Shipping and Logistics Management	4-0-0	40	60	3	4
B	20MBA203	Business Analytics	4-0-0	40	60	3	4
C	20MBA---	Elective I	3-0-0	40	60	3	3
D	20MBA---	Elective II	3-0-0	40	60	3	3
E	20MBA---	Elective III	3-0-0	40	60	3	3
F	20MBA---	Elective IV	3-0-0	40	60	3	3
G	20MBA---	Elective V	3-0-0	40	60	3	3
	20MBA351	Internship	0-0-6	40	60		3
		Total	23-0-6				26

Semester IV

Exam Slot	Course No.	Course Name	L-T-P	Internal Marks	End Semester Marks	Exam Duration (hours)	Credits
A	20MBA208	Maritime Strategic Management & Policy	4-0-0	40	60	3	4
B	20MBA210	Cross-Cultural Management in International Trade	4-0-0	40	60	3	4
C	20MBA---	Elective VI	3-0-0	40	60	3	3
D	20MBA---	Elective VII	3-0-0	40	60	3	3
E	20MBA---	Elective VIII	3-0-0	40	60	3	3
	20MBA352	Project & Comprehensive Viva Voce	0-0-10	100	100	3	5
	20MMOOC	Any PG Management Course of 3 Credits of NPTEL/SWAYAM*	0-0-3				3
		Total	17-0-13				25
		Grand Total					102

*The students may undergo the MOOC course in any semester, but the credit of same will be entered only in the fourth semester. The MOOC course should be from the list of approved courses published by the university from time to time.

Preferably in related industries

List of Electives

Course code	Shipping and Logistics	Semester	Exam Slot
20MBA371	Commercial Geography	S3	C
20MBA373	E-commerce Logistics	S3	C
20MBA375	Port and Terminal Management	S3	D
20MBA377	Global Transportation Management	S3	D
20MBA379	Indian Customs Law I	S3	E
20MBA381	Maritime Insurance	S3	E
20MBA383	International Trade and Compliance	S3	F
20MBA385	Supply Chain Analytics	S3	F
20MBA387	Freight Transportation and Distribution Management	S3	G
20MBA271	Supply Chain Management	S3	G
20MBA372	Sustainable Logistics and Green Supply Chain Management	S4	C
20MBA374	Sustainability in the Maritime Industry	S4	C
20MBA376	Indian Customs Law II	S4	D
20MBA378	International Logistics	S4	D
20MBA380	Maritime Cyber Security Management	S4	E
20MBA382	Digital Transformation in Shipping and Logistics	S4	E

SYLLABUS
MBA SHIPPING & LOGISTICS MANAGEMENT

SEMESTER 3

Course Code	Course Name	Category	L	T	P	Credit
20MBA209	SHIPPING & LOGISTICS MANAGEMENT	Core	4	0	0	4

Preamble

Shipping and Logistics management plays a pivotal role in the success of organizations operating in today's global marketplace. This course designed to provide more insights to the students on planning, implementation, and control of the efficient and effective flow of goods and services, and related information from the point of origin to the point of consumption.

Prerequisite: Nil

Course Outcome: After the successful completion of the course, the student will be able to:

CO 1	Understand the overview of Shipping concepts.
CO 2	Analyze Port management operations.
CO 3	Understand the concepts of Logistics Management.
CO 4	Evaluate the cost of transportation.
CO 5	Apply Technologies in Logistics.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	-	-
CO 2	2	3	2	1	1
CO 3	3	2	1	-	-
CO 4	2	3	3	2	2
CO 5	1	2	2	3	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA209 – SHIPPING & LOGISTICS MANAGEMENT

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Define Shipping.
2. Write short note on Terminal Management System.
3. Define Logistics Management.
4. Write short note on 4PL.
5. Differentiate WMS & TMS.

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks.

6. Elaborate the components of Crew management.
7. Discuss the Terminal management Systems.
8. Integrated Logistics Management is imperative in today's business. Justify
9. Illustrate the role of Logistics providers.
10. Describe the RFID and barcode technology in logistics.

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. Company XYZ is a global e-commerce retailer that sells a wide range of products through its online platform. The company is experiencing significant growth and has expanded its operations to multiple countries. As a result, they are facing logistical challenges in managing their supply chain effectively. The management team is looking for solutions to optimize their supply chain operations and improve their overall logistics management.

Critically evaluate the situation and suggest necessary solutions for the given scenario

(1 x 20 = 20 marks)

Syllabus

Module 1	Ship Operations and Management Introduction to Shipping – Meaning, Scope and importance. Ship types and characteristics - Ship operations and voyage planning - Ship maintenance and dry-docking- Ship safety and environmental management - Crew management and training.
Module 2	Port Operations and Management Port infrastructure and terminal operations- Port planning and design- Port and terminal management systems- Port logistics and intermodal operations- Port security and risk management.
Module 3	Logistics Management: Logistics – Meaning and Definition, logistics management- Definition, scope, Importance, Evolution, Framework, Integrated logistics management, Flow of logistics management, Trends in logistics.
Module 4	Transportation: Various Modes of Transport, Choice and Issues for Each Mode, Transport Cost Characteristics, Third party logistics provider (3pl), Fourth party Logistics providers (4 pl)- Stages-Role of logistics providers.
Module 5	Technology in Logistics: Inventory control techniques, Warehouse management systems (WMS), Transportation management systems (TMS), RFID and barcode technology in logistics- Application and benefits.

Text Books

1. Song, D. W., & Panayides, P. (2012). *Maritime Logistics: A Complete Guide to Effective Shipping and Port Management*. Kogan Page Publishers.
2. Thomopoulos, I. C., *Maritime Operations: A Guide for Practitioners*.
3. Christopher, M. (2016). *Logistics and Supply Chain Management*. FT Publishing International
4. Ghiani, G., Laporte, G., & Musmanno, R. (2004). *Introduction to Logistics Systems Planning and Control*, Wiley publishing.

References

1. Tatham, P., & Christopher, M. (Eds.). (2018). *Humanitarian logistics: Meeting the challenge of preparing for and responding to disasters*. Kogan Page Publishers.
2. Agrawal, D. K. (2003). *Textbook of Logistics and Supply Chain Management*. Macmillan.
3. Lambert, D., Stock, J. R., & Ellram, L. M. (1998). *Fundamentals of logistics management*. McGraw-Hill/Irwin.

4. Rushton, A., Croucher, P., & Baker, P. (2022). *The handbook of logistics and distribution management: Understanding the supply chain*. Kogan Page Publishers.
5. John J. Coyle, Robert A. Novack, Brian Gibson, and Edward J. Bardi (2015), *Transportation: A Global Supply Chain Perspective*, South-Western College Publishing
6. Gwynne Richards (2017) *Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse*, Kogan Page Publishers

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (hours)
1	Ship Operations and Management	
1.1	Introduction to Shipping – Meaning, Scope and importance	2
1.2	Ship types and characteristics	2
1.3	Ship operations and voyage planning	2
1.4	Ship maintenance and dry-docking	1
1.5	Ship safety and environmental management	1
1.6	Crew management and training	2
2	Port Operations and Management	
2.1	Port infrastructure and terminal operations	2
2.2	Port planning and design	2
2.3	Port and terminal management systems	2
2.4	Port logistics and intermodal operations	2
2.5	Port security and risk management	1
3	Logistics Management	
3.1	Logistics – Meaning and Definition	1
3.2	logistics management- Definition, scope, Importance, Evolution	2
3.3	Framework, Integrated logistics management	2
3.4	Flow of logistics management	2
3.5	Trends in logistics	2
4	Transportation	
4.1	Various Modes of Transport	1
4.2	Choice and Issues for Each Mode	2
4.3	Transport Cost Characteristics	2
4.4	Third party logistics provider (3pl)	2
4.5	Fourth party Logistics providers (4 pl)	1
4.6	Stages-Role of logistics providers	2
5	Technology in Logistics	
5.1	Inventory control techniques	2
5.2	Warehouse management systems (WMS)	2
5.3	Transportation management systems (TMS)	2
5.4	RFID and barcode technology in logistics	2
5.5	Application and benefits	2
	Total	48 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA203	BUSINESS ANALYTICS	Core	4	0	0	4

Preamble: This course Business Analytics offers a perspective to the business needs and trends in analytics space. The objective of the course is to assist the student in gaining a basic understanding of Business Analytics and its application in various functional areas.

Prerequisite: NIL

Course Outcomes: After the completion of the course the student will be able to:

CO 1	Recall various business analytical models and concepts.
CO 2	Explain business analytical tools and techniques in Finance and Operations Management.
CO 3	Apply business analytical tools and techniques in Human Resource Management.
CO 4	Analyze business analytical tools and techniques in Marketing and Web Analytics.
CO 5	Evaluate business situations using predictive models and analytics.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	2	3	1	2	1
CO 2	3	3	2	1	1
CO 3	3	3	2	2	2
CO 4	3	3	1	2	2
CO 5	2	3	2	2	1

Assessment Pattern

Bloom's Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

**THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT)
DEGREE EXAMINATION**

20MBA203 – BUSINESS ANALYTICS

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. State the concept of business intelligence.
2. Define credit risk analysis.
3. Mention the relationship between performance and skill gap analysis.
4. Recall the importance of customer profiling.
5. What are multiple time period models?

(5x2 marks = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks.

6. Discuss the various tools incorporated for data visualization.
7. Elucidate the role played by make/buy decisions in business analytics.
8. “Evaluation of reliability and validity of selection models are in vain.” How far this opinion is true?
9. Illustrate the part played by web analytics in modern marketing.
10. Depict the applications of business analytics in the different fields of business.

(3x10 marks = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. You were working as the Business Analyst in the telecom industry, Mumbai. Due to the recent pandemic situations, as a part of work arrangement by the same business group you are forced to join in the same position of their CPG company located at Pune. What are the precautions that you should consider with respect to your job profile and how will you manage this crisis as a professional in the field of business analytics?

(1x20 marks = 20 marks)

Syllabus	
Module 1	<p>Business Analytics: Business Analytics, evolution and scope, Business Analytics process, Business Intelligence.</p> <p>Decision models. Spreadsheets modelling, Datasets, data cleaning, outliers and outliers diagnostics. Data Visualization -Tools and techniques, Applications. Big Data Analytics, Machine learning algorithms, Data Mining process, Quality of predictions, Optimizing complex decisions, Challenges in data driven decision making.</p>
Module 2	<p>Financial Analytics and Operations Analytics: Understanding Risk, credit risk analysis, fraud detection and prevention analytics, analytics in banking and financial services - analytics in retail banking and wealth management</p> <p>Demand Planning – Forecasting, Model building, Supply chain analytics-Supply planning - Procurement and Strategic Sourcing, Inventory Modeling - Aggregate planning and resource allocation decisions, Make/Buy decision.</p>
Module 3	<p>Human Resource Analytics: Basics of HR analytics, HR Metric and HR Analytics, Intuition versus analytical thinking; People analytics, Recruitment Analytics- Evaluating Reliability and validity of selection models, Finding out selection bias, Predicting the performance and turnover, On Boarding Analytics, Staffing Analytics, Performance & Skill Gap Analytics, Compensation & Benefit Analytics, Training & Learning Analytics, Promotion and Succession Planning Analytics, Compliance Analytics, Attrition & Retention Analytics, HRMS/HRIS and data sources; Analytics frameworks like LAMP, HCM:21 Model.HR dashboards, Power BI.</p>
Module 4	<p>Marketing Analytics: Basics of marketing analytics, marketing decisions models, characteristics, types and benefits of marketing decisions models, Market Intelligence, Text analysis and search analysis, Customer profiling, Statistical programming, Choice Models and Logistic Regression, data mining and visualization, Response Models Concept, Factor segmentation, clustering algorithms, perceptual maps, Use of Excel to solve business problems, Google Analytics.</p> <p>Web Analytics: Click stream analytics, anonymous vs. registered users analysis, Social Media Analytics - User generated content – Page tagging, Server log files, Data abstractions. Sentiment Analysis, Analytics in digital decoding consumer intent, decoding customer sentiments from comments, Text mining from opinion platforms.</p>
Module 5	<p>Predictive Analytics and Application of Analytics in Business:</p> <p>Logic driven predictive models – single-period purchase decisions, multiple time period models, overbooking decisions. Data Driven predictive models - retail pricing markdowns, modeling relationships and trends Models involving uncertainty - what-if analysis, scenario manager, goal-seek.</p> <p>Applications in other business areas - Analytics in telecom and location-based intelligence marketing, analytics in consumer-packaged goods (CPG), analytics in utilities, analytics in healthcare, analytics in online retail.</p>

Text Books

1. Evans, J.R. (2013). *Business Analytics: Methods, Models, and Decisions*, Pearson.
2. Malhotra, N.K. and Dash, S. (2011). *Marketing Research*, 6th ed. Pearson India
3. Baesens, B., Vlasselaer, V.V. and Verbeke, W. (2015). *Fraud Analytics Using Descriptive, Predictive and Social Network Techniques*, (1st ed). Wiley India,
4. Prasad R.N. & Acharya S. (2011). *Fundamentals of Business Analytics*, (1st ed.) Wiley.
5. Davenport, T.H. and Harris, J.G. (2007). *Competing on Analytics: The New Science of Winning*, 1st ed. Harvard Business Review Press
6. Damodharan, A. (2007). *Strategic Risk Taking*, 1st ed., FT Press
7. Davenport, T.H., Harris, J.G., and Morison, R. (2010). *Analytics at Work: Smarter Decisions, Better Results*, 1st ed., Accenture
8. R. Jubi (2023), *Business Analytics - Unleashing Data Driven Decision Making*, 1st edition, Nehas Publications.

References and Suggested Readings

1. Raman, A and Fisher, M. (2010). *How Analytics Are Transforming the Supply Chain and Improving Performance*, 1st ed. HBS Press
2. Fitz-enz, J. (2010). *The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital Investments*, 1st ed., American Management Association
3. Peterson, E. (2004). *Web Analytics Demystified: A Marketer's Guide to Understanding How Your Web Site Affects Your Business*, 1st ed. Celilo Group Media & Café Press
4. Lilien, G.L. and Rangaswamy, L. (2004), *Marketing Engineering: Computer Assisted Marketing Analysis and Planning*, 2nd ed. Revised, Trafford Publishing.

Course Contents and Lecture Schedule

No	Topic	No. of Lectures (in hours)
1	Business Analytics:	
1.1	Business Analytics	3
1.2	Decision models and Spreadsheet modeling	3
1.3	Data Visualization	3
2	Financial Analytics and Operations Analytics	
2.1	Financial analytics	3
2.2	Fraud analytics	3
2.3	Demand planning and supply chain analytics	3
3	Human Resource Analytics:	
3.1	Human resource analytics, Recruitment analytics	3
3.2	On boarding analytics, Skill Gap analytics	3
3.3	Attrition and retention analytics	3
4	Marketing Analytics	
4.1	Marketing analytics basics	3
4.2	Tools and models, Factor segmentation	4
4.3	4B and web analytics	3
5	Predictive Analytics and Application of Analytics in Business:	
5.1	Predictive modelling	3
5.2	Problems	4
5.3	Case study with industry data	4
	Total	48 Hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA351	INTERNSHIP	Core	0	0	6	3

Preamble

Internship will be considered as a core course in the third semester. Every student is expected to do the Summer Internship Training (SIT) outside the college/ institution for a duration of 6 to 8 weeks. The Summer Internship Training is to be conducted in a Public/Private/Cooperative sector organisation (preferably in related industries) during the summer period after the second semester. The internship helps the student to get an understanding of business functions like Marketing, Finance, Operations and Information Systems with special emphasis on management functions like planning, organising, controlling, coordinating and budgeting of business activities.

Course Outcomes: After the completion of the course the student will be able to:

CO 1	Apply knowledge and skill sets acquired from the internship in organisational functions
CO 2	Develop real-world problem-solving skills by analysing work environment
CO 3	Build professional capabilities including right work attitude, self-confidence, interpersonal skills and team work

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	2	1
CO 2	3	2	1	1	1
CO 3	2	1	3	1	2

Assessment Pattern

The external evaluation will be conducted by the examiners appointed by the University and the internal evaluation by a panel constituted by the college/institute. The criteria for evaluation will be as detailed below:

Internal Evaluation 40 marks (by an internal committee)

Criteria	Marks
Progress of work	10
Log Book/Work Diary	10
Internship Presentations	20
Total	40

External Evaluation 60 marks (by the University)

Criteria	Marks
Final Report	30
Internship Viva Voce	30
Total	60

Course Code	Course Name	Category	L	T	P	Credit
20MBA371	COMMERCIAL GEOGRAPHY	Elective	3	0	0	3

Preamble

This elective course explores the spatial dynamics and geographic factors influencing business activities including commodities, industries, ports, and containerization. Through real-world case studies and analytical frameworks, students will develop a strategic mindset to leverage geographic insights in decision-making.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to:

CO1	Recall the key concepts, theories, and frameworks in commercial geography
CO2	Understand the impact of commercial geography on global trade patterns, transportation routes, and logistics network
CO3	Identify the geopolitical factors and their influence on international trade, logistics operations, and supply chain management
CO4	Analyse strategies for navigating the complexities of global markets
CO5	Evaluate current knowledge regarding commercial geography and propose innovative solutions to optimize international trade and logistics operations.

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	1
CO2	2	2	1	3	2
CO3	2	3	1	2	3
CO4	3	1	2	1	2
CO5	2	3	1	2	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
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Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

**THIRD SEMESTER (MBA SHIPPING & LOGISTICS MANAGEMENT)
DEGREE EXAMINATION**

20MBA371- COMMERCIAL GEOGRAPHY

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Explain any two approaches to commercial geography
2. List out a few factors affecting international trade
3. What are the factors that determine the industrial location?
4. Recall the geographical features of ports in India
5. Differentiate between Owning vs. Leasing vessels.

(5x2 marks = 10 marks)

PART B

Answer any *three* Questions. Each question carries 10 marks

6. Explain the prevalent patterns in world trade with special emphasis on prohibited and restricted commodities
7. How does port Infrastructure impact the logistics performance? What is your understanding of port infrastructure and how that would affect economic growth in the blue ocean economy?
8. Critically evaluate the performance and contributions to the economic development of major Industries in India (i) Iron & Steel Industries, (ii) Cotton & Textile Industries, (iii) automobile industries, and (iv) petrochemical industries.
9. Compare and contrast the contributions of Vizhinjam International Seaport with any other ports in India.
10. "India's container business can no longer be contained." How far this statement is true according to you? Prove your arguments with suitable data.

(3x10 marks = 30 marks)

PART C

Compulsory Question. This question carries 20 marks

11. In 2015, the Indian government launched Sagarmala, a huge infrastructure project involving investments of INR 8 crore. Sagarmala aims to reduce the time and cost of transporting goods using maritime and rail transport, and keep road transport to a minimum, allowing manufacturers and exporters to locate their industrial facilities at the

point of shipment (ports), Building rail lines connecting ports to the nearest rail junction that can transport cargo to destination cities, building pipelines that will transport chemicals to the nearest destination (rather than trucking them), and creating a road network that will connect ports with the industrial corridor, without the vehicles having to go through the cities.

When completed, Sagarmala will generate an investment of Rs 4-8 crore, 40 billion jobs, save up to Rs 40 000 crore per year in logistics costs and increase exports by \$110 000 million by trying to achieve all this development by 2025 at the latest. According to an ICRA study, the program is being impeded due to a lack of timely investment mobilization and budgetary support. Other major challenges include the creation of an environment favorable for businesses and tangible incentives to attract the private sector, resistance from the local fishermen, impact on the coastal ecosystem, massive dredging impacting fish catch, and displacement of fishing communities.

1. Critically examine the issues faced by Sagarmala Program. What are the measures that can be taken to make use of its potential? (15)
2. Recommend solutions to safeguard traditional livelihoods like fishing while promoting communities' growth and development (5)

Syllabus

Module 1	Commercial Geography Definition of commercial geography and its branches; Geographical Environment and Commerce; World trade pattern in major commodities; Meaning, nature & Use of Resources; Classification of Resources
Module 2	Commodities Geographical factors affecting international trade; India's foreign trade of commodities; Characteristics of commodities and their origin, type of transportation used for movement to ports; Port Infrastructure for commodities
Module 3	Industries Role of Industries in Economic Development; Factors of Industrial Location; Major Industries in India - Iron & Steel Industries; Cotton, Textile Industries; Automobile Industries; Petrochemical industries; Important world centres for the export of agricultural products
Module 4	Ports Types of Ports; Geographical features of ports; Ports of the world (special emphasis on Vizhinjam Port and Sagar Mala); Important bulk terminals; Important container terminals; Major oil terminals
Module 5	Containerization Introduction to the Container Business and Role of Container Terminals; Container characteristics; Types and purpose-Container terminology, Container integrity, and security; Container packing; Container seals and securing-Techniques; Container ownership and management- Owning vs. Leasing- Storage, maintenance, and repair

Text Books

1. William P. Anderson (2012), *Economic Geography*, (1st edition), Routledge
2. Shyam Prakash (2012), *Fundamentals of Economic Geography*, (1st edition), Pragun Publication
3. Dikshit, RD (2018), *Geographical Thought – A Contextual History of Ideas*, (2nd edition), Prentice Hall of India (PHI)
4. Kap Hwan Kim, Hans-Otto Günther (2007), *Container Terminals and Cargo Systems: Design, Operations Management, and Logistics Control Issues*, (1st edition), Springer

References and Suggested readings

1. Evrim Ursavas Guldogan (2011), *Port Operations and Container Terminal Management with applications*, (6th Edition), VDM Verlag
2. Sadanand Gupta (2016), *Shipping Industry in India: Colonialism to Globalisation: A Spatio-Temporal Analysis*, (1st edition), Pentagon Press
3. Jaya Prakash Pradhan (2016), *Manufacturing Exports from Indian States: Determinants and Policy Imperatives (India Studies in Business and Economics)*, (1st edition), Springer Nature
4. Eugeniusz Gostomski, Ryszard K. Miler, Tomasz Nowosielski, (2022), *Containerization in Maritime Transport: Contemporary Trends and Challenges*, (1st edition), Taylor & Francis Ltd

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (Hours)
1	Commercial Geography	
1.1	Definition of commercial geography and its branches	1
1.2	Geographical Environment and Commerce	1
1.3	World trade pattern in major commodities	1
1.4	Meaning, nature, use and classification of Resources	2
2	Commodities	
2.1	Geographical factors affecting international trade	2
2.2	India's foreign trade of commodities & characteristics	2
2.3	Type of transportation used for movement to ports	1
2.4	Port Infrastructure for commodities	1
3	Industries	
3.1	Role of Industries in Economic Development	2
3.2	Major Industries in India - Iron & Steel Industries	1
3.3	Cotton, Textile Industries	2
3.4	Automobile Industries; Petrochemical industries	2
4	Ports	
4.1	Types of Ports; Geographical features of ports	2
4.2	Ports of the world (special emphasis on Vizhinjam Port and Sagar Mala)	2
4.3	Important bulk terminals; Important container terminals	2
4.4	Major oil terminals	2
5	Containerization	
5.1	Introduction to the Container Business and Role of Container Terminals	2
5.2	Types and purpose-Container terminology, Container integrity, and security	2
5.3	Container integrity, and security; Container packing	2
5.4	Container seals and securing-Techniques	2
5.5	Container ownership and management- Owning vs. Leasing- Storage, maintenance, and repair	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA373	E-COMMERCE LOGISTICS	Elective	3	0	0	3

Preamble: E-commerce logistics is a dynamic and evolving field, shaped by technological advancements, changing consumer expectations, and environmental imperatives. This subject explores the intricacies of managing logistics in the e-commerce ecosystem, delving into topics such as supply chain optimization, warehouse management, transportation strategies, reverse logistics, and the integration of emerging technologies like artificial intelligence, blockchain, etc.

Prerequisite: Nil

Course outcome:

After the successful completion of the course, the student will be able to:

CO 1	Understand the concepts of the E-commerce logistics ecosystem
CO 2	Analyze the Order management and processing in e-commerce
CO 3	Evaluate the Customer experience and last-mile delivery innovations
CO 4	Evaluate the Data analytics for demand forecasting and inventory management
CO 5	Analyze the Future trends and developments in e-commerce logistics

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	3	2
CO 2	3	3	2	2	2
CO 3	3	3	2	3	2
CO 4	3	3	2	3	2
CO 5	3	3	2	3	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT)
DEGREE EXAMINATION

20MBA373- E-COMMERCE LOGISTICS

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Differentiate traditional and E-commerce logistics
2. Write a short note on reverse logistics.
3. Briefly explain delivery network optimization
4. What is route optimization?
5. Briefly explain Omni-channel logistics

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

6. Explain E-commerce logistics models
7. Elucidate order management and processing in e-commerce logistics
8. What are the various shipping documents for international trade?
9. How to manage order returns and reverse logistics?
10. Discuss Sustainability and green initiatives in e-commerce logistics

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. Explain the usage of Robotics and automation in e-commerce with at least two examples having real world relevance.

(1 x 20 = 20 marks)

Syllabus

Module 1	E-commerce Logistics Overview of e-commerce and its Impact on Logistics-Key differences between traditional and e-commerce logistics- E-commerce logistics models and strategies-E-commerce logistics ecosystem and stakeholders
Module 2	Order Fulfilment in E-commerce Order management and processing in e-commerce logistics-Inventory management and warehouse operations-Pick, pack, and ship process-Managing order returns and reverse logistics
Module 3	Last-Mile Delivery in E-commerce Last-mile delivery challenges and solutions-•Same-day and next-daydelivery options-Urban logistics and delivery network optimization-Customer experience and last-mile delivery innovations
Module 4	Technology and Data Analytics in E-commerce Logistics E-commerce platforms and logistics integration-Transportation management systems (TMS) and route optimization-Data analytics for demand forecasting and inventory management-Tracking and visibility technologies in e-commerce logistics
Module 5	Emerging Trends in E-Commerce Logistics Omni-channel logistics and retail integration-Sustainability and green initiatives in e-commerce logistics-Robotics and automation in e-commerce fulfillment centers-Future trends and developments in e-commerce logistics

Text Book

1. Kayikci, Y. (2019). *E-Commerce in logistics and supply chain management. In Advanced Methodologies and Technologies in Business Operations and Management* (pp. 1015- 1026). IGI Global.
2. Marcia Robinson *E-commerce Operations Management: Second Edition*
3. Frank Koopmann, Bernhard Walke, and Wolfgang Muehlbauer, *The E-Commerce Handbook*,
4. Sandeep Kumar Mohanty and Sanjay Mohapatra, *E-commerce Logistics: The Quest for Efficacy*.

References

1. Deborah L. Bayles Bayles, D. L. (2001), *E-commerce Logistics and Fulfillment: Delivering the Goods*. Prentice Hall PTR.
2. Narendra Agrawal, & Smith, S. A. (2009), *Retail Supply Chain Management: Quantitative Models and Empirical Studies*. Springer US.
3. Rogerio Valle, Renato de Oliveira Moraes, and Marcel Andreotti Musetti, *E-commerce Supply Chain Management: A Literature Review and Classification*
4. Shubham Jain, *Supply Chain Management for E-commerce*
5. Changh, *E-commerce Logistics: Theory and Practice*

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (hours)
1	E-commerce Logistics	
1.1	Overview of e-commerce and its Impact on Logistics-	2
1.2	Key differences between traditional and e-commerce logistics	1
1.3	E-commerce logistics models and strategies	2
1.4	E-commerce logistics ecosystem and stakeholders	2
2	Order Fulfilment in E-commerce	
2.1	Order management and processing in e-commerce logistics	2
2.2	Inventory management and warehouse operations	2
2.3	Pick, pack, and ship process	1
2.4	Managing order returns and reverse logistics	2
3	Last-Mile Delivery in E-commerce	
3.1	Last-mile delivery challenges and solutions	2
3.2	Same-day and next-day delivery options	1
3.3	Urban logistics and delivery network optimization	2
3.4	Customer experience and last-mile delivery innovations	2
4	Technology and Data Analytics in E-commerce Logistics	
4.1	E-commerce platforms and logistics integration-	1
4.2	Transportation management systems (TMS) and route optimization-	2
4.3	Data analytics for demand forecasting and inventory management	2
4.4	Tracking and visibility technologies in e-commerce logistics	2
5	Emerging Trends in E-Commerce Logistics	
5.1	Omni-channel logistics and retail integration-	1
5.2	Sustainability and green initiatives in e-commerce logistics	2
5.3	Robotics and automation in e-commerce	2
5.4	Fulfillment centers	1
5.5	Future trends and developments in e-commerce logistics	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA375	PORT AND TERMINAL MANAGEMENT	Elective	3	0	0	3

Preamble

This course gives an insight into the importance of Terminal Management and it also helps the students to recognize the vital role of Port Terminal Management in global trade, economic growth, and regional connectivity.

Prerequisite: NIL

Course outcome: After the successful completion of the course the student will be able to:

CO 1	Understand the historical development of ports and terminals
CO 2	Analyze the impact of port infrastructural facilities in the terminal management system
CO 3	Identify the relevant port operations and services
CO 4	Formulate tariff structures, port-marketing strategies, and public-private partnership
CO 5	Application of automation and digitization in port operations

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	2	2	1
CO 2	2	3	2	2	1
CO 3	2	3	3	3	1
CO 4	3	3	3	3	1
CO 5	3	3	3	3	1

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT)

DEGREE EXAMINATION

20MBA375- PORT AND TERMINAL MANAGEMENT

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Explain the importance of port and terminal management.
2. Define the concept of port design.
3. Specify the strategies for port marketing.
4. Describe the concept of customs and regulatory compliance.
5. Illustrate the concept of cargo handling equipment.

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

6. Elucidate the scope of port and terminal management.
7. Illustrate the relevant port operations in detail.
8. Specify different cargo handling services.
9. Explicate the principal areas of port automation.
10. Impact of terminal operations on the operational efficiency of terminal management.

(3 x 10 = 30 marks)

PART C

Compulsory Question. This question carries 20 marks

11. Port XYZ is a major container port located on the coast of a developing country. The port handles a large volume of international trade and plays a vital role in the country's economic growth. However, the port has been facing various operational and management challenges that hinder its overall efficiency and competitiveness in the global market. Challenges Faced by Port XYZ are Congestion, Inefficient Cargo Handling, Ineffective Terminal Operations, and Security and Safety.

Explicate effective management strategies for improving the operational efficiency of port management performance.

(1 x 20 = 20 marks)

Syllabus	
Module 1	Introduction to Port and Terminal Management: Definition and scope of port and terminal management- Historical development of ports and terminals- Types of ports and terminals- Regulatory Framework and governance structure.
Module 2	Port Infrastructure and Facilities: Port layout and design- Berth and Quay operations- Cargo handling equipment- Warehousing and storage facilities- Security and safety considerations.
Module 3	Port Operations and Services: Vessel scheduling and berth planning- Cargo handling and stowage- Customs and regulatory compliance- Documentation and cargo tracking-Port performance measurement.
Module 4	Port Economics and Marketing: Port pricing and tariff structures- Port competition and market dynamics- Port marketing strategies- Port hinterland connectivity- Port privatization and public-private partnerships.
Module 5	Technologies in Port Management: Automation and digitization in port operations- Sustainability and environmental considerations in port operations.

Text Book

1. Notteboom, T. E., & Rodrigue, J.-P. (2011). *Port Management: Cases in Port Geography, Operations and Policy*. Routledge.
2. Branch, A. E., & Tummala, V. M. R. (2009). *Ports in Proximity: Competition and Coordination Among Adjacent Seaports*. Edward Elgar Publishing.
3. Brooks, M. R., & Cullinane, K. P. (2007). *Devolution, Port Governance and Port Performance*. Ashgate Publishing.

References and Suggested Reading

1. Stopford, M. (2009). *Maritime Economics*. Routledge.
2. Notteboom, T., & Cariou, P. (2009). *Container Ports and Terminal Choice: Modelling and Application*. Ashgate Publishing.
3. Slack, B., & Comtois, C. (2006). *The Geography of Transport Systems*. Routledge.

Course Contents and Lecture Schedule

No	Topic	No. of Lectures (Hours)
1	Introduction to Port and Terminal Management	
1.1	Introduction and Evolution of Port and Terminal Management	2
1.2	Scope and Significance of Port and Terminal Management	2
1.3	Types of ports and terminals	3
1.4	Regulatory Framework and governance structure	2
2	Port Infrastructure and Facilities	
2.1	Port Layout Configurations and Design	3
2.2	Difference between Harbour, Port, Terminal, Berth, Quay Concept of Berth allocation and quay crane assignments	3
2.3	Cargo handling equipment, Warehousing and storage facilities, Security and safety considerations	2
3	Port Operations and Services	
3.1	Vessel scheduling and berth planning, Cargo handling and stowage, Customs, and regulatory compliance	3
3.2	Documentation and cargo tracking, Port performance measurement	2
4	Port Economics and Marketing	
4.1	Port pricing and tariff structures	2
4.2	Port competition and market dynamics, Port marketing strategies, Challenges for Maritime Globalization	2
4.3	Port hinterland connectivity, Port privatization, and public- private partnerships, Port privatization policy and practice, Conditions for Port privatization	3
5	Technologies in Port Management	
5.1	Automation and digitization in port operations- benefits, challenges, and opportunities	3
5.2	Sustainability and environmental considerations in port operations, The role of sustainability practices in international port operations	2
5.3	Trends for sustainable ports and shipping, the concept of green port operations	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA377	GLOBAL TRANSPORTATION MANAGEMENT	Elective	3	0	0	3

Preamble:

This course is designed to equip students with the knowledge and skills necessary to effectively manage the complexities of international transportation networks. It will explore the various aspects of global transportation, including modes of transportation, regulatory frameworks, logistics operations, and strategic decision-making.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to:

CO1	Understand the key concepts, principles, and theories related to global transportation management.
CO2	Identify and analyze the various modes of transportation used in global supply chains
CO3	Demonstrate knowledge of the regulatory frameworks and compliance requirements governing international transportation
CO4	Apply logistics principles and practices in the context of global transportation management
CO5	Evaluate the challenges and complexities associated with global transportation

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	3
CO2	2	3	3	3	2
CO3	2	2	3	2	3
CO4	2	3	2	3	3
CO5	3	2	3	2	2

Assessment Pattern

Bloom's Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA377- GLOBAL TRANSPORTATION MANAGEMENT

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Differentiate Intermodal transportation and multimodal logistics.
2. Define route optimization
3. Short note on 3PL,
4. Explain piracy in international transportation
5. Short note on TMS

(5x2 marks=10marks)

PART B

Answer any *three* questions. Each question carries 10marks.

6. Explain the regulatory Framework and international transportation agreements.
7. Discuss sustainable transportation practices
8. Elaborate on Carrier evaluation and selection criteria.
9. Discuss Supply chain disruptions and contingency planning
10. Explain in detail about various tracking and visibility technologies involved in Transportation Management.

(3x10 marks = 30 marks)

PART C

Compulsory question. This question carries 20marks

11. Logilink Express is a global manufacturing and distribution company with operations spanning multiple countries. As the company expands its operations and faces the challenges of managing a complex transportation network, it recognizes the need for an advanced Transportation Management System (TMS) to streamline its logistics operations, improve visibility, and optimize transportation costs. You are asked to analyze and implement the TMS system.

Develop a detailed report including all the processes in implementing TMS at Logilink Express.

(1x20 marks = 20 marks)

Syllabus

Module 1	Introduction to Global Transportation Management Role and Significance of Transportation in global supply chains-Modes of transportation- air, sea, road, and rail, Intermodal transportation and multimodal logistics, Regulatory Framework, and international transportation agreements.
Module 2	Transportation Planning and Network Design Transportation demand forecasting, Route optimization and network design, Inventorymanagement, and transportation, Sustainable transportation practices
Module 3	Carrier Selection and Freight Forwarding Carrier evaluation and selection criteria, Freight forwarding and third-party logistics (3PL) providers, Freight rate negotiation and contracts, Documentation and customs compliance
Module 4	Risk Management in Global Transportation Risk assessment and mitigation strategies-Insurance and liability considerations-Supply chain disruptions and contingency planning, Security and Piracy in international transportation
Module 5	Technology and Innovation in Transportation Management Transportation management systems (TMS), Tracking and visibility technologies, E- commerce and digital platforms in transportation, Big data analytics, and predictive modeling in transportation

Text Books

1. Coyle, J. J., Novack, R. A., Gibson, B., & Bardi, E. J. (2015). *Transportation: a global supply chain perspective*. Cengage Learning.
2. Mangan, J., & Lalwani, C. (2016). *Global logistics and supply chain management*. John Wiley & Sons.
3. Yarusavage, G. (2018). *Global Logistics and Supply Chain Management*, Transportation Journal

References and Suggested Readings

1. Choi, T. M., Liu, S. C., Tang, C. S., & Yu, Y. (2011). *A cross-cluster and cross-region analysis of fashion brand extensions*. Journal of the Textile Institute.
2. Branch, A. E. (2008). *Global supply chain management and international logistics*. Routledge.

Course Contents and Lecture Schedule

No	Topic	No. of Lectures (hours)
1	Introduction to Global Transportation Management	
1.1	Role and Significance of Transportation in global supply chains	3
1.2	Modes of transportation- air, sea, road, and rail	2
1.3	Intermodal transportation and multimodal logistics	2
1.4	Regulatory Framework and international transportation agreements	2
2	Transportation Planning and Network Design	
2.1	Transportation demand forecasting	3
2.2	Route optimization and network design, Inventory management, ` and transportation	2
2.3	Sustainable transportation practices	2
3	Carrier Selection and Freight Forwarding	
3.1	Carrier evaluation and selection criteria, Freight forwarding	2
3.2	Third-party logistics (3PL) providers, Freight rate negotiation, and contracts	2
3.3	Documentation and customs compliance	2
4	Risk Management in Global Transportation	
4.1	Risk assessment and mitigation strategies	3
4.2	Insurance and liability considerations-Supply chain disruptionsand contingency planning	2
4.3	Security and Piracy in international transportation	2
5	Technology and Innovation in Transportation Management	
5.1	Transportation management systems (TMS), Tracking andvisibility technologies	2
5.2	E-commerce and digital platforms in transportation	3
5.3	Big data analytics and predictive modeling in transportation	2
	Total	36 Hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA379	INDIAN CUSTOMS LAW - I	Elective	3	0	0	3

Preamble

This course helps the students to gain solid understanding of key concepts in customs duty and law. The course helps the students to get insights in The Customs Act 1962, rules, regulations and documentation.

Prerequisite: Nil

Course outcome: After the successful completion of the course the student will be able to:

CO 1	Understand the fundamentals of customs duty and law.
CO 2	Asses the sections of Customs Act.
CO 3	Describe the power of agents.
CO 4	Document levy for import and export goods.
CO 5	Demonstrate the auditing procedures.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	1	1
CO 2	2	1	1	2	2
CO 3	2	3	2	2	2
CO 4	1	2	1	2	1
CO 5	2	1	1	2	1

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

**THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT)
DEGREE EXAMINATION**

20MBA379- INDIAN CUSTOMS LAW- I

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Describe the importance of customs law.
2. List the classes of officers.
3. Define exportation goods.
4. Explain customs duties.
5. Write short note on appeals.

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

6. Illustrate the procedure for import and export goods.
7. Explain the power of customs officers.
8. Describe the power of central governments to notify goods.
9. Comment the purpose of refund sections.
10. Describe provisions relating to coastal goods.

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. Develop a document for Precautions to be taken by persons acquiring notified goods.
Consider a suitable example for your discussion.

(1 x 20 = 20 marks)

Syllabus

Module 1	Understanding customs duty and law Overview of custom duty-features objects and types. Important Definitions customs law and Rules. Restrictions on import-export. Procedure for import and export and clearance. Prohibited goods, notified goods, and specified goods. Restricted imports. Provisions relating to Baggage. Export promotion schemes.
Module 2	The Customs Act, 1962 Sections - Short title, extent and commencement, definitions, Officers of customs - Classes of officers of customs, Appointment of officers of customs, Powers of officers of customs, Entrustment of functions of Board and customs officers on certain other officers, Appointment of customs ports, airports- Power to approve landing places and specify limits of customs area, Appointment of boarding stations.
Module 3	Power to prohibit importation or exportation of goods, Detection of illegally imported goods and prevention of the disposal thereof – Definitions, Power of Central Government to notify goods, Persons possessing notified goods to intimate the place of storage, Precautions to be taken by persons acquiring notified goods, Persons possessing notified goods to maintain accounts, Sections 11C, 11E and 11F not to apply to goods in personal use, prevention or detection of illegal export of goods.
Module 4	Levy of, and exemption from, customs duties, indicating amount of duty in the price of goods, etc., for purpose of refund sections, advance rulings, provisions relating to conveyances carrying imported or exported goods, clearance of imported goods and export goods, payments through electronic cash ledger, goods in transit, warehousing.
Module 5	Drawback, special provisions regarding baggage, goods imported or exported by post, courier and stores, provisions relating to coastal goods and vessels carrying coastal goods, audit, searches, seizure and arrest, confiscation of goods and conveyances and imposition of penalties sections, settlement of cases, appeals, offences and prosecutions, miscellaneous.

Text Books

1. Customs Act, 1962 Bare Act, (Print/eBook), by EBC.
2. The Customs Act, 1962 Bare Act with Short Comments Edition 2021.
3. Customs Law Manual 2024-25 (In 2 Volumes), R K Jain,

References

1. Customs Tariff of India 2024-25 (In 2 Volumes) by R K Jain Edition: 79th Edition, 2024
2. BIGs Easy Reference Customs Manual for Imports – Exports by Arun Goyal, Asim Goyal Edition: 5th Edition, Feb 2023

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	Understanding customs duty and law	
1.1	Overview of custom duty-features objects and types	1
1.2	Important Definitions customs law and Rules. Restrictions on import-export	1
1.3	Procedure for import and export and clearance	2
1.4	Prohibited goods, notified goods, and specified goods. Restricted imports	2
1.5	Provisions relating to Baggage. Export promotion schemes.	1
2	The Customs Act, 1962	
2.1	Sections - Short title, extent and commencement, definitions	1
2.2	Officers of customs - Classes of officers of customs	1
2.3	Appointment of officers of customs, Powers of officers of customs, Entrustment of functions of Board and customs officers on certain other officers	2
2.4	Appointment of customs ports	1
2.5	Power to approve landing places and specify limits of customs area, Appointment of boarding stations	2
3		
3.1	Power to prohibit importation or exportation of goods	1
3.2	Detection of illegally imported goods and prevention of the disposal thereof – Definitions, Power of Central Government to notify goods	2
3.3	Persons possessing notified goods to intimate the place of storage, Precautions to be taken by persons acquiring notified goods	2
3.4	Sections 11C, 11E and 11F not to apply to goods in personal use, prevention or detection of illegal export of goods	2
4		
4.1	Levy of, and exemption from, customs duties, indicating amount of duty in the price of goods, etc., for purpose of refund sections	2
4.2	advance rulings, provisions relating to conveyances carrying imported or exported goods	2
4.3	clearance of imported goods and export goods	2
4.4	payments through electronic cash ledger, goods in transit, warehousing.	1
5		
5.1	Drawback, special provisions regarding baggage, goods imported or exported by post	2
5.2	Courier and stores, provisions relating to coastal goods and vessels carrying coastal goods	2
5.3	Audit, searches, seizure and arrest	1
5.4	Confiscation of goods and conveyances and imposition of penalties sections, settlement of cases	2
5.5	Appeals, offences and prosecutions, miscellaneous.	1
	Total	36 Hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA381	MARITIME INSURANCE	Elective	3	0	0	3

Preamble

This course provides a comprehensive understanding of the principles and practices of insurance in the maritime industry. Explore different types of policies, claims handling, and emerging trends in maritime insurance. Gain the knowledge and skills to navigate the complex world of maritime insurance effectively. Get ready for an exciting journey into the world of Maritime Insurance.

Prerequisite: Nil

Course outcome: After the successful completion of the course the student will be able to:

CO 1	Understand the fundamentals of maritime insurance and gain insights into the key concepts, principles, and purposes of maritime insurance, and recognize its importance in managing risks and protecting assets within the maritime sector.
CO 2	Identify and analyze different types of maritime insurance coverage.
CO 3	Apply insurance and risk management principles to ports and terminals, enabling them to implement appropriate measures to mitigate risks in these environments.
CO 4	Analyze and apply the principles of general average and salvage in maritime insurance, and evaluate jurisdiction and applicable laws in maritime insurance disputes, showcasing their ability to synthesize and evaluate legal aspects of marine insurance contracts.
CO 5	Analyze future trends and opportunities in maritime insurance, showcasing the ability to evaluate and apply knowledge of the evolving industry landscape.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	2	2	3	3	2
CO 2	2	2	2	2	3
CO 3	3	3	2	3	2
CO 4	3	2	2	2	2
CO 5	3	2	2	1	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

**THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT)
DEGREE EXAMINATION**

20MBA381- MARITIME INSURANCE

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Define marine insurance markets.
2. Define protection and indemnity (P&I) insurance.
3. Mention the underwriting principles in maritime insurance.
4. Explain the general average in maritime insurance.
5. Explain is the role of digitalization in marine insurance

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

6. Explain the significance of maritime insurance in the shipping industry.
7. Describe types of coverage, valuation methods, and claims handling in cargo insurance.
8. Discuss the underwriting principles and practices in maritime insurance.
9. Explain the process of claims handling in maritime insurance.
10. Discuss the impact of digitalization and technological advancements on marine insurance.

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. Evaluate the underwriting principles and practices in maritime insurance, considering the unique risks and challenges faced by the shipping industry. Discuss the key factors insurers consider during the underwriting process, including vessel condition, trade routes, and cargo characteristics.

(1 x 20 = 20 marks)

Syllabus

Module 1	Maritime Insurance Overview of maritime insurance and its significance in the shipping industry- Insights into marine insurance markets and top players- Marine insurance policies and clauses.
Module 2	Types of Maritime Insurance Coverage Hull and machinery insurance: coverage and risk assessment- Cargo insurance: Types of coverage, valuation, and claims handling- Protection and indemnity (P&I) insurance: scope of coverage and liabilities- War risk insurance and other specialized coverages
Module 3	Risk Management and Insurance in the Maritime Sector Risk assessment and risk management in the maritime industry- Underwriting Principles and Practices in maritime insurance- Loss prevention and risk reduction strategies- Insurance and risk management for ports and terminals.
Module 4	Claims Handling and Legal Aspects of Maritime Insurance Claims handling process in maritime insurance- General average and salvage in Maritime Insurance- Jurisdiction and applicable law in maritime insurance disputes- Legal aspects of marine insurance contracts.
Module 5	Emerging Trends and Challenges in Maritime Insurance Digitalization and technological advancements in marine insurance- Sustainability Considerations in maritime insurance- Emerging Risks and Challenges in the maritime sector- Future Trends and Opportunities in maritime insurance.

Text Books

1. Pearson, R., & Williams, D. (2013). *Marine Insurance: Origins and Institutions, 1300-1850*. Cambridge University Press.
2. Myburgh, P., & Wong, S. L. C. (2014). *Maritime Law and Practice in Hong Kong*. Sweet & Maxwell Asia.
3. Rose, F. (2011). *Marine Insurance Claims. Informa Law from Routledge Maritime Risk and Insurance* - Martin Davies and David Williams

References

1. Hodges, S. (2016). *Marine Insurance: Law and Practice*. Routledge.
2. Hornung, L. (2018). *Hull and Machinery Insurance: Forms and Clauses*. Informa Law, Routledge.
3. Baker, M., & Jessen, H. (2015). *Marine Risk and Insurance: Managing Maritime Risks*. Informa Law from Routledge.

Course Contents and Lecture Schedule

No.	Topic	No. of lectures (in hours)
1	Maritime Insurance	
1.1	Overview of maritime insurance	1
1.2	Significance in the shipping industry	2
1.3	Insights into marine insurance markets and top players	2
1.4	Marine insurance policies and clauses.	2
2	Types of Maritime Insurance Coverage	
2.1	Types of insurance coverage	1
2.2	Hull and machinery insurance	1
2.3	Cargo Insurance	1
2.4	Types of Coverage, valuation and claims handling	2
2.5	Protection and indemnity insurance	2
2.6	War Risk Insurance and other coverages	2
3	Risk Management and Insurance in the Maritime Sector	
3.1	Risk assessment and risk management in the maritime industry-	2
3.2	Underwriting Principles and Practices in maritime insurance-	1
3.3	Loss prevention and risk reduction strategies	2
3.4	Insurance and risk management for ports and terminals	2
4	Claims Handling and Legal Aspects of Maritime Insurance	
4.1	Claims handling process in maritime insurance	2
4.2	General average and salvage in Maritime Insurance	1
4.3	Jurisdiction and applicable law in maritime insurance disputes	2
4.4	Legal aspects of marine insurance contracts	2
5	Emerging Trends and Challenges in Maritime Insurance	
5.1	Digitalization and technological advancements in marine insurance	1
5.2	Sustainability Considerations in maritime insurance	1
5.3	Emerging Risks and Challenges in the maritime sector	2
5.4	Future Trends and Opportunities in maritime insurance.	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA383	INTERNATIONAL TRADE AND COMPLIANCE	Elective	3	0	0	3

Preamble

This course explores the procedures of customs and trade policies in shipping and logistics worldwide. It aims to provide students with a clear understanding of customs regulations and requirements, trade compliance, risk and procedures.

Prerequisite: Nil

Course outcomes: After the successful completion of the course, the student will be able to:

CO 1	Understand the role of customs in international trade.
CO 2	Understand the customs regulations and procedures.
CO 3	Analyze the trade compliance and regulatory requirements.
CO 4	Asses the risks in customs and trade compliance.
CO 5	Adapt to emerging trends in trade compliance.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO1	3	2	1	1	1
CO2	3	3	2	1	1
CO3	3	3	2	2	2
CO4	3	2	3	2	3
CO5	3	2	1	3	3

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA383- INTERNATIONAL TRADE AND COMPLIANCE

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

- 1 Explain the role of customs in international trade.
- 2 List the customs regulations.
- 3 Define anti-dumping duty.
- 4 Describe risk management in customs.
- 5 Write a short note on digitalization in trade compliance.

(5x2=10marks)

PARTB

Answer any *three* questions. Each question carries 10 Marks

- 6 Illustrate the Importance of trade compliance for logistics businesses.
- 7 Prepare customs documentation for a leading exporting company.
- 8 Compare trade compliance frame works and programs.
- 9 Describe the assessment tools for trade compliance risk.
- 10 Digitalization and automation in customs processes are indispensable. Justify.

(3 x10 =30 marks)

PART C

Compulsory question. This question carries 20 marks

- 11.** India too finds itself at the center of the matrix. The incidence of NTBs falls heavily on India's trade efficiency. The ecosystem of the clearance of goods in Indian ports needs to be revamped comprehensively to bring certainty, uniformity, and predictability to the entire procedure. Customs is one of the major stakeholders of this ecosystem and has initiated a series of reforms to bridge the gaps vis-a vis other stakeholders to reduce the dwell time in port handling and improve efficiency. India has been facing two major difficulties in the goods clearance processes at its ports. The first issue pertains to inadequate coordination among various governmental agencies and other stakeholders, as according to the Indian Customs Act, 1962, any commodity imported or exported needs to undergo certain legal and procedural formalities of various departments or ministries before being permitted clearance by customs. Secondly, there are soft infrastructural bottlenecks of various kinds. Both concerns not only extend the dwell time of cargoes at the ports but also increase trade costs. Comment. (1 x20 =20 marks)

Syllabus

Module1	Introduction to Customs and Trade Compliance Overview of Customs and trade compliance, Role of Customs in international trade, Importance of trade compliance for businesses, international trade agreements and organizations, Trade facilitation, and supply chain security.
Module2	Customs Regulations and Procedures Overview of customs regulations and procedures, Classification and valuation of goods, Customs documentation and declarations, Customs duties, taxes, and fees, Customs clearance, and inspection processes.
Module 3	Trade Compliance and Regulatory Requirements Import and export controls and restrictions, Trade compliance frameworks and programs, Export controls and sanctions, Anti-dumping and countervailing duties, Rules of Origin, and preferential trade agreements.
Module 4	Risk Management and Compliance Auditing Risk management in customs and trade compliance, Compliance auditing and internal controls, Trade compliance risk assessment, Compliance with customs laws and regulations, Corrective actions, and penalties for non-compliance.
Module 5	Emerging Trends and Challenges in Trade Compliance Digitalization and automation in customs processes, E-commerce and cross-border trade compliance, Intellectual property rights protection, Sustainability, and ethical considerations in Trade, Future trends and developments in trade compliance.

Text Books

1. Murphy, P. E., & Shadbegian, R. J. (2011). *International Business Law and Its Environment*. South-Western Cengage Learning.
2. Chaisse, J., & Choukroune, L. (2012). *Research Handbook on International Trade Law*. Edward Elgar Publishing.
3. Lester, S. (2019). *International Trade Law*. Routledge.

References

1. Bhagwati, J. (2008). *Termites in the Trading System: How Preferential Agreements Undermine Free Trade*. Oxford University Press.
2. Pauwelyn, J., Wessel, R. A., & Wouters, J. (2010). *Informal International Lawmaking: Case Studies*. Oxford University Press.
3. Grossman, G. M., & Helpman, E. (2016). *Globalization and Trade*. MIT Press.

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in Hours)
1	Introduction to Customs and Trade Compliance	
1.1	Overview of Customs and trade compliance	1
1.2	Role of Customs in international trade	2
1.3	Importance of trade compliance for businesses	1
1.4	International trade agreements and organizations	2
1.5	Trade facilitation and supply chain security	1
2	Customs Regulations and Procedures	
2.1	Overview of customs regulations and procedures	1
2.2	Classification and valuation of goods	1
2.3	Customs documentation and declarations	2
2.4	Customs duties, taxes, and fees	2
2.5	Customs clearance and inspection processes	1
3	Trade Compliance and Regulatory Requirements	
3.1	Import and export controls and restrictions	2
3.2	Trade compliance frameworks and programs	1
3.3	Export controls and sanctions	2
3.4	Anti-dumping and countervailing duties	1
3.5	Rules of Origin and preferential trade agreements	2
4	Risk Management and Compliance Auditing	
4.1	Risk management in customs and trade compliance	1
4.2	Compliance auditing and internal controls	2
4.3	Trade compliance risk assessment	1
4.4	Compliance with customs laws and regulations	2
4.5	Corrective actions and penalties for non-compliance	1
5	Emerging Trends and Challenges in Trade Compliance	
5.1	Digitalization and automation in customs processes	1
5.2	E-commerce and cross-border trade compliance	2
5.3	Intellectual property rights protection	1
5.4	Sustainability and ethical considerations in Trade	2
5.5	Future trends and developments in trade compliance	1
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA385	SUPPLY CHAIN ANALYTICS	Elective	3	0	0	3

Preamble: Students will be able to navigate the intricacies of supply chain analytics, effectively utilize analytics tools and technologies, and develop innovative strategies to optimize supply chain performance. It aims to explore the intersection of data science and supply chain management, leveraging the power of analytics to tackle the challenges faced by businesses. By harnessing the vast amounts of data generated along the supply chain, organizations can unlock hidden patterns, identify bottlenecks, mitigate risks, and optimize processes to achieve operational excellence.

Prerequisite: Nil

Course outcome: After the successful completion of the course, the student will be able to:

CO 1	Understand supply chain concepts and develop a solid understanding of the key concepts, principles, and components of supply chains.
CO 2	Analyze supply chain data using various tools and techniques
CO 3	Apply with relevant analytics tools and technologies commonly used in supply chain analysis
CO 4	Evaluate the risks in supply chain operations and develop strategies to optimize them.
CO 5	Understand emerging trends, technologies, and practices in supply chain analytics.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	1	2	2	1
CO 2	3	2	1	3	2
CO 3	2	3	2	3	2
CO 4	1	3	3	3	3
CO 5	3	2	3	2	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA385- SUPPLY CHAIN ANALYTICS

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Define supply chain analytics in the context of decision-making.
2. Discuss the importance of data preprocessing in supply chain analytics.
3. What are predictive modeling techniques, and how are they used in supply chain forecasting?
4. How can transportation and logistics network optimization benefit supply chain efficiency?
5. Discuss the impact of big data analytics on supply chain visibility.

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

6. List and briefly describe three key concepts or metrics used in supply chain performance measurement.
7. How can inventory analysis and optimization contribute to improving supply chain performance?
8. Explain how supplier performance analysis and risk assessment can benefit from predictive analytics.
9. How can transportation and logistics network optimization improve supply chain efficiency?
10. Discuss the benefits and challenges associated with real-time analytics in agile supply chain management.

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. ABC Logistics is a leading logistics company that provides delivery services to various businesses across multiple cities. The company faces challenges in optimizing its delivery routes, resulting in increased fuel costs, longer delivery times, and inefficient resource utilization. ABC Logistics is looking to leverage supply chain analytics to analyze historical data, optimize delivery routes, and improve overall operational efficiency.

Based on the historical delivery data and the optimized routes, what potential cost savings can ABC Logistics achieve by implementing the recommended route optimization strategies? How will these cost savings impact the company's bottom line?

(1 x 20 = 20 marks)

Syllabus

Module 1	Supply Chain Analytics Overview of supply chain analytics and its Role in Decision-making - Key Concepts and Metrics in supply chain performance measurement - Challenges and Opportunities in applying analytics to supply chain management
Module 2	Descriptive Analytics in Supply Chain Management Data collection and preprocessing techniques in supply chain analytics - Data visualization and reporting for supply chain analysis - Trend analysis and demand forecasting methods - Inventory analysis and optimization
Module 3	Predictive Analytics in Supply Chain Management Predictive modeling techniques for supply chain forecasting - Machine learning algorithms for demand forecasting and inventory optimization - Supplier performance analysis and risk assessment - Predictive maintenance and asset management in logistics operations
Module 4	Prescriptive Analytics in Supply Chain Management Optimization models and techniques for supply chain design and planning - Transportation and logistics network optimization - Inventory optimization and order fulfillment strategies - Simulation modeling for supply chain decision-making
Module 5	Emerging Trends and Challenges in Supply Chain Analytics Big data analytics and supply chain visibility - Real-time analytics and agile supply chain management - Ethical Considerations and privacy issues in supply chain analytics - Future Trends and Opportunities in supply chain analytics

Textbooks

1. Chopra, S., & Meindl, P. (2020). *Supply Chain Management: Strategy, Planning, and Operation*. Pearson.
2. Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2014). *Designing and Managing the Supply Chain: Concepts, Strategies, and Case Studies*. McGraw-Hill Education.
3. Ganeshan, R., & Harrison, T. P. (2013). *Introduction to Supply Chain Management*. CRC Press.

References and suggested readings

1. Chen, F. (2019). *Handbook of Healthcare Analytics: Theoretical Minimum for Conducting 21st Century Research on Healthcare Operations*. CRC Press.
2. Nahmias, S. (2014). *Production and Operations Analysis*. Waveland Press.
3. Rardin, R. L. (2008). *Optimization in Operations Research*. Prentice Hall.

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	Supply Chain Analytics	
1.1	Introduction	1
1.2	Overview of supply chain analytics and its Role in Decision-making	1
1.3	Key Concepts and Metrics in supply chain performance measurement	2
1.4	Challenges and opportunities in applying analytics to supply chain management	2
2	Descriptive Analytics in Supply Chain Management	
2.1	Data collection and preprocessing techniques in supply chain analytics	2
2.2	Data visualization and reporting for supply chain analysis	2
2.3	Trend analysis and demand forecasting methods	2
2.4	Inventory analysis and optimization	2
3	Predictive Analytics in Supply Chain Management	
3.1	Predictive modeling techniques for supply chain forecasting	2
3.2	Machine learning algorithms for demand forecasting and inventory optimization	2
3.3	Supplier performance analysis and risk assessment	2
3.4	Predictive maintenance and asset management in logistics operations	2
4	Prescriptive Analytics in Supply Chain Management	
4.1	Optimization models and techniques for supply chain design and planning	2
4.2	Transportation and logistics network optimization	2
4.3	Inventory optimization and order fulfillment strategies	2
4.4	Simulation modeling for supply chain decision-making	2
5	Emerging Trends and Challenges in Supply Chain Analytics	
5.1	Big data analytics and supply chain visibility	2
5.2	Real-time analytics and agile supply chain management	2
5.3	Ethical Considerations and privacy issues in supply chain analytics	1
5.4	Future Trends and Opportunities in supply chain analytics	1
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA387	FREIGHT TRANSPORTATION AND DISTRIBUTION MANAGEMENT	Elective	3	0	0	3

Preamble:

This course is designed for explore the foundational tenets and procedures of distribution and freight management. The covers over important ideas including inventory management, supply chain management, different types of transportation, freight paperwork, warehousing, and distribution systems. The utilization of data analytics, automation, and sustainable practices are just a few of the new trends and technology that are revolutionizing the industry. You will have a thorough understanding of how to create efficient distribution and transportation plans, enhance logistical operations, and reduce risks in freight operations by the end of this course. You will have the knowledge and resources necessary to make decisions that will increase productivity, cut costs, and improve customer happiness.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to:

CO1	Gain knowledge of freight transportation and distribution management.
CO2	Evaluate transportation modes to make informed decisions.
CO3	Learn to create efficient distribution networks, optimize routes, and schedule shipments.
CO4	Acquire knowledge of essential documents and effective inventory control strategies to minimize holding costs while ensuring stock availability.
CO5	Develop critical thinking and analytical skills to make informed decisions.

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5
CO1	3	2	3	3	3
CO2	2	3	2	3	2
CO3	1	2	3	2	3
CO4	2	2	2	3	2
CO5	3	2	3	2	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

**THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT)
DEGREE EXAMINATION**

20MBA387- FREIGHT TRANSPORTATION AND DISTRIBUTION MANAGEMENT

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Short note on importance of distribution management.
 2. Define Intermodal Transportation.
 3. State the procedures for Freight forwarding and documentation,
 4. Differentiate cross docking and transshipment.
 5. Explain the importance of digitalization in freight transportation.
- (5x2 marks=10marks)

PART B

Answer any *three* questions. Each question carries 10 marks.

6. Explain the impact of distribution management on customer service.
 7. Discuss the different modes of ocean transportation.
 8. Explain freight rate negotiation and steps involved in it.
 9. Discuss the inventory management in distribution centers.
 10. Describe the sustainable transportation practices with examples
- (3 x 10 marks = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. XYZ Inc. is a growing e-commerce company that sells a wide range of consumer products through its online platform. As the company expands its customer base and product offerings, it recognizes the need to optimize its distribution network to enhance operational efficiency, reduce costs, and improve customer service. You are assigned to design and configure a distribution network including the location planning for the company. As an assigned person, how do you prepare an effective plan including justifications for each.
- (1 x 20 marks = 20 marks)

Syllabus

Module 1	Freight Transportation and Distribution Management Freight transportation - role in the supply chain - Overview of distribution management - its Impact on customer service - Key stakeholders in freight transportation and distribution.
Module 2	Modes of Freight Transportation Road transportation - Trucking, express delivery, and last-mile logistics transportation - Intermodal transportation, containerization, and rail freight operations Ocean transportation - Liner shipping, port operations, and container shipping transportation - Air cargo operations, express air freight, and air freight logistics.
Module 3	Freight Transportation Operations and Planning Freight consolidation and deconsolidation strategies, Freight forwarding, documentation, Freight rate negotiation and contracting, Performance metrics and performance indicators (KPI's)
Module 4	Distribution Network Design and Optimization Distribution network configuration and facility location decisions, Warehouse inventory management in distribution centers, Cross-docking and transshipment strategies, Route optimization and load planning, Reverse logistics and product management
Module 5	Emerging Trends and Sustainability in Freight Transportation Digitalization and automation in freight transportation and logistics, green logistics, sustainable transportation practices, E-commerce and its impact on last-mile delivery Future trends in freight transportation and distribution management

Text Books

1. Coyle, J. J., Novack, R. A., Gibson, B., & Bardi, E. J. (2015). *Transportation: a global supply chain perspective*. Cengage Learning.
2. Glass, D. (2013). *Freight forwarding and multi modal transport contracts*. Taylor & Francis.
3. Harrison, A., Skipworth, H., van Hoek, R. I., & Aitken, J. (2019). *Logistics management and strategy*. Pearson UK.
4. Dent, J. (2011). *Distribution channels: Understanding and managing channels to market*. Kogan Page Publishers.
5. Mangan, J., & Lalwani, C. (2016). *Global logistics and supply chain management*. John Wiley & Sons.

References

1. Waters, C. D. J., & Waters, D. (Eds.). (2003). *Global logistics and distribution planning: strategies for management*. Kogan Page Publishers.
2. Knemeyer, A. M. (2006). *Logistics and Supply Chain Management: Creating Value-Adding Networks*. Transportation Journal.
3. Sussman, J. (2000). *Introduction to transportation systems*.
4. Bektas, T. (2017). *Freight transport and distribution: concepts and optimisation models*. CRC Press.

Course Contents and Lecture Schedule

No	Topic	No. of Lectures (hours)
1	Freight Transportation and Distribution Management	
1.1	Freight transportation overview and role in the supply chain.	3
1.2	Overview of distribution management -and its Impact on customer service.	2
1.3	Key stakeholders in freight transportation and distribution.	2
2	Modes of Freight Transportation	
2.1	Road transportation -Trucking, express delivery and last-mile logistics.	3
2.2	Rail transportation - Intermodal transportation, containerization, and rail freight operations.	2
2.3	Ocean transportation - Liner shipping, port operations, and container shipping.	2
2.4	Air transportation - Air cargo operations, express air freight, and air freight logistics.	2
3	Freight Transportation Operations and Planning	
3.1	Freight consolidation and deconsolidation strategies	2
3.2	Freight forwarding and documentation, Freight rate negotiation and contracting	2
3.3	Performance metrics and key performance indicators (KIPs)	2
4	Distribution Network Design and Optimization	
4.1	Distribution network configuration and facility location decisions	3
4.2	Warehouse and inventory management in distribution centers, Cross-docking and transshipment strategies	2
4.3	Route optimization and load planning, Reverse logistics and product returns management	2
5	Emerging Trends and Sustainability in Freight Transportation	
5.1	Digitalization and automation in freight transportation and logistics	2
5.2	Green logistics and sustainable transportation practices, E-commerce and its impact on last-mile delivery	3
5.3	Future trends in freight transportation and distribution management	2
	Total	36 Hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA271	SUPPLY CHAIN MANAGEMENT	Elective	3	0	0	3

Preamble: The course on Supply Chain Management helps the students to comprehend the concepts of supply chain with reference to the recent trends. The course equips students to apply the concept of strategic fit, delineate the supply chain drivers and the supply chain metrics, appraise supply chain network decisions, analyse the impact of uncertainty in supply chain and decipher the importance of demand and supply planning in supply chain with reference to the global and Indian context.

Prerequisite: NIL

Course Outcomes: After the completion of the course the student will be able to:

CO 1	Evaluate the importance of Supply Chain Strategic Framework.
CO 2	Analyse the Supply Chain Network Decisions.
CO 3	Appraise the significance of planning demand and supply in Supply Chain.
CO 4	Explain the impact of uncertainty in a Supply Chain.
CO 5	Evaluate the impact of Transportation, Sourcing and Pricing Decisions in Supply Chain Success.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	3	2	2	2
CO 2	3	3	2	3	2
CO 3	3	3	3	3	3
CO 4	3	3	3	3	2
CO 5	3	3	2	3	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
THIRD SEMESTER MBA (SHIPPING & LOGISTICS MANAGEMENT)
DEGREE EXAMINATION
20MBA271- SUPPLY CHAIN MANAGEMENT

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. List out the drivers of supply chain management
2. State the factors influencing decisions regarding network design.
3. Interpret the term 'Bull whip effect'.
4. State the role of cycle inventory in a supply chain.
5. State the relevance of fourth party logistics.

(5x2 marks = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

6. Discuss the goal of a supply chain and explain how supply chain decisions affect the success of a firm.
7. Interpret the term Global Supply Chain. Demonstrate how you will implement global supply chain decisions in the post Covid Indian Scenario.
8. Demonstrate the role forecasting plays in the supply chain of a build-to-order manufacturer like Dell.
9. Why is it important to consider uncertainty while evaluating supply chain design decision? Explain.
10. Compare the different transportation network design options in supply chain.

(3x10 marks = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. Critically examine how supply chain flows affect the success or failure of a firm like Flipkart? Recommend some supply chain decisions that have a significant impact on the supply chain Profitability.

(1x20 marks = 20 marks)

Syllabus	
Module 1	Supply chain strategic framework – Concept of Supply Chain, Objectives and Importance of Supply Chain, Supply Chain Process, Supply Chain Decisions, Competitive and Supply Chain Strategies, Achieving Strategic Fit, Expanding Strategic Scope, Obstacles to achieving strategic Fit, Achieving and Maintaining Strategic Fit in the current Indian Scenario, Supply Chain Drivers and Metrics.
Module 2	Designing the supply chain network - Role of Distribution in the Supply Chain, Factors influencing Distribution Network Design Decisions, Design Options for a Distribution Network, Distribution Decisions in Indian FMCG Sector. Network Design – Components of Network Design, Factors affecting Network Design Decisions, Impact of Uncertainty on Network Design, Global Supply Chain – Making Global Supply Chain Design Decisions with reference to Indian Scenario.
Module 3	Planning demand and supply in a supply chain – Role of Forecasting in a Supply Chain, Characteristics of a Forecast, Forecasting Methods, Role of Aggregate Planning in Supply Chain, Aggregate Planning Problem, Aggregate Planning Strategies, Managing Supply and Demand, Predictive Variability in Practice, Lack of Supply Chain Coordination and Bull Whip Effect, Obstacles to Supply Chain Coordination, Managerial levers to achieve coordination.
Module 4	Planning and managing uncertainty in supply chain – Role of Cycle Inventory in a Supply Chain, Cycle Inventory Optimisation with reference to Indian Distribution Channels, Role of safety Inventory in a Supply Chain, Impact of Supply Chain Uncertainty on Safety Inventory, Impact of Aggregation on Safety Inventory, Impact of Replenishment Policies on Safety Inventory, Managing Uncertainty in Supply Chain through Postponement, Role of IT in Inventory Management, Supply Chain IT Framework and Transaction Management Foundation.
Module 5	Designing and planning transportation, sourcing and pricing decisions in a supply chain - Role of Transportation in Supply Chain, Modes of Transportation and their performance characteristics, Transportation Network Design Options in Supply Chain, Transportation Decisions in Practice. Role of Sourcing in Supply Chain, In-house or Outsource, 3PL and 4PL, Pricing and Revenue Management in a Supply Chain.

Text Book

1. Sunil Chopra, Peter Meindl, Kalra D.V. (2018). *Supply Chain Management: Strategy, Planning and Operation* (7th edition). Pearson Education Ltd.
2. Donald J. Bowersox, David J Closs, Bixby Cooper M. (2014). *Supply Chain Logistics Management*. McGraw Hill Education.
3. Nada R. Sanders (2013). *Supply Chain Management: A Global Perspective*. Wiley.

References and Suggested Readings

1. Sahay B.S. (2012). *Supply Chain Management for Global Competitiveness*. MacMillan India Ltd.
2. David N Burt, Donald W. Dobler, Stephen L Starling (2012). *World Class Supply Chain Management: The Key to Supply Chain Management*. McGraw Hill Education.
3. Sople V.V. (2013). *Logistics Management: Supply Chain Imperative*. Pearson Education.
4. Alan. E. Branch (2008). *Global Supply Chain Management and International Logistics*. Routledge.

Course Contents and Lecture Schedule

No	Topic	No. of Lectures (in Hours)
1	Introduction to supply chain	
1.1	Enumerate the objectives and concepts of Supply Chain	2
1.2	Interpret the fundamental concepts in Strategic fit	2
1.3	Compare Supply Chain Drivers and Impact on Supply Chain Performance	2
2	Designing the supply chain network	
2.1	Illustrate the Distribution Network Design Options	3
2.2	Factors affecting Network Design	2
2.3	Compare and contrast the Domestic and Global Supply Chain	2
3	Planning demand and supply in a supply chain	
3.1	Enumerate the forecasting methods	3
3.2	Describe the Aggregate Planning Problem and Strategies.	3
3.3	Demonstrate the effects of Lack of Supply chain coordination.	2
4	Planning and managing uncertainty in supply chain	
4.1	Relate the Cycle Inventory Optimisation in Indian Distribution Channels	3
4.2	Appraise the Impact of Uncertainty on Safety Inventory.	3
4.3	Appraise the IT Supply Chain framework and TMF	2
5	Designing & planning transportation, sourcing and pricing decisions in a SC	
5.1	List down the various Transportation Network Design Options	3
5.2	Describe the Sourcing Strategies	2
5.3	Appraise the Pricing and Revenue Management in a Supply Chain.	2
	Total	36 Hours

SYLLABUS
MBA SHIPPING & LOGISTICS MANAGEMENT

SEMESTER 4

Course Code	Course Name	Category	L	T	P	Credit
20MBA208	MARITIME STRATEGIC MANAGEMENT AND POLICY	Core	4	0	0	4

Preamble

Acknowledging the ever-changing and complex nature of the maritime environment, characterized by evolving geopolitical dynamics, emerging threats, and technological advancements. Affirming our commitment to safeguarding our maritime interests, promoting maritime cooperation, and preserving the principles of freedom of navigation, rule of law, and respect for international norms. Understanding the critical role of a comprehensive Maritime Strategy and Policy in effectively addressing maritime challenges, enhancing our maritime capabilities, and ensuring a secure and stable maritime domain

Prerequisite: NIL

Course outcome: After the successful completion of the course the student will be able to:

CO 1	Explain the maritime strategy and policy, historical context, evolution, challenges, trends, and significance.
CO 2	Understanding of the concept of national maritime strategy, maritime security maritime infrastructure, and port policies.
CO 3	Identify the international maritime laws and regulations.
CO 4	Analyze the role of geopolitics and maritime strategy.
CO 5	Evaluate the future trends and emerging issues in maritime strategy and policy.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	1	1	2	1
CO 2	2	2	2	2	2
CO 3	3	3	3	3	3
CO 4	3	3	3	3	3
CO 5	2	3	2	3	3

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA208- MARITIME STRATEGIC MANAGEMENT AND POLICY

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Define maritime strategy?
2. Write a short note on maritime security?
3. Elucidate the purpose of the law of the sea?
4. Analyse the regional security challenges?
5. Specify the influence of technological advancement in maritime strategy?

(5 x 2 marks = 10 marks)

PART B

Answer any **three** questions. Each question carries 10 marks.

6. Illustrate the global maritime challenges and trends?
7. Briefly explain maritime infrastructure development and port policies.
8. How the maritime environmental regulations and sustainability influence maritime strategy?
9. Analyse the power dynamics in the maritime domain?
10. How to assess the emerging challenges in maritime governance?

(3 x 10 marks = 30 marks)

PART C

Compulsory Question. This question carries 20 marks

11. Country X's maritime strategy lacks coherence and implementation, resulting in weak maritime security measures, limited naval capabilities, sluggish economic development, strained diplomatic relations, and inadequate environmental sustainability efforts.

How would you assess the shortcomings of Country X's maritime strategy and policy?
What are the measures that should be opted to frame a prudent maritime strategy?

(1x20 marks = 20 marks)

Syllabus	
Module 1	Introduction to Maritime Strategy and Policy: Insights into maritime strategy and Policy - Historical Context and Evolution of maritime strategies - Maritime policy frameworks and Stakeholders -Global maritime challenges and Trends -Maritime Security and its Significance in Strategy and Policy
Module 2	National Maritime Strategies: Analysis of national maritime strategies of selected countries -Maritime security and defense policies -Economic and trade policies related to maritime industries -Maritime infrastructure development and port policies -Case Studies on successful national maritime strategies
Module 3	International Maritime Law and Regulations: Introduction to international maritime law and Conventions - Key legal frameworks governing maritime activities - Law of the Sea and maritime boundaries - Maritime environmental regulations and Sustainability- Dispute resolution mechanisms in maritime law
Module 4	Geopolitics and Maritime Strategy: Geopolitical Analysis and its Impact on maritime strategy - Power Dynamics in the maritime domain -Regional security challenges and Cooperation -Maritime Silk Road and its Implications -Role of non-state Actors in maritime geopolitics.
Module 5	Future Trends and Emerging Issues: Technological Advancements and their influence on maritime strategy -Emerging Challenges in maritime governance -Climate Change and Its Impact on maritime activities - Digitalization and Automation in the maritime sector -Strategic Responses to future maritime challenges

Text Book

1. Rubel, R. C. (2018). **Maritime Strategy and Global Order: Markets, Resources, Security**.
2. Prescott, V., & Bodansky, D. (2000). **The Law of the Sea: Definition of the Continental Shelf: An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea**.
3. McNicholas, M. (2012). **Maritime Security: An Introduction**.
4. Kraska, J. (2011). **Maritime Power and the Law of the Sea: Expeditionary Operations in World Politics**.
5. Hattendorf, J., & Elleman, B. (1989). **Maritime Strategy and the Nuclear Age**.

References

1. Geoffrey, T. (2009). *Seapower: A Guide for the Twenty-First Century*.
2. Cutler, T. J. (Ed.). (2016). *Naval Institute Guide to Maritime Strategy*.
3. Hattendorf, J. B., & Jordan, R. S. (Eds.). (2010). *Naval Strategy and National Security: An International Security Reader*.

Course Contents and Lecture Schedule

No	Topic	No. of Lectures (in hours)
1	Introduction to Maritime Strategy and Policy	
1.1	Insights into maritime strategy and Policy, Historical Context, and evolution of maritime strategies.	3
1.2	Maritime policy frameworks and Stakeholders	3
1.3	Global maritime challenges and Trends	2
1.4	Maritime Security and its Significance in Strategy and Policy	2
2	National Maritime Strategies	
2.1	Analysis of national maritime strategies of selected countries	2
2.2	Maritime security and defense policies, Economic and trade policies related to maritime industries.	3
2.3	Maritime infrastructure development and port policies	2
2.4	Case Studies on successful national maritime strategies	2
3	International Maritime Law and Regulations	
3.1	Introduction to international maritime law and Conventions	3
3.2	Key legal frameworks governing maritime activities	2
3.3	Law of the Sea and maritime boundaries	2
3.4	Maritime environmental regulations and Sustainability	2
3.5	Dispute resolution mechanisms in maritime law	2
4	Geopolitics and Maritime Strategy	
4.1	Geopolitical Analysis and its impact on maritime strategy	3
4.2	Power dynamics in the maritime domain	2
4.3	Regional security challenges and Cooperation	2
4.4	Maritime Silk Road and its Implications -Role of non-state Actors in maritime geopolitics.	3
5	Future Trends and Emerging Issues	
5.1	Technological advancements and their influence on maritime strategy, Emerging Challenges in maritime governance	3
5.2	Climate Change and Its Impact on maritime activities	2
5.3	Digitalization and automation in the maritime sector	1
5.4	Strategic Responses to future maritime challenges	2
	Total	48 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA210	CROSS CULTURAL MANAGEMENT IN INTERNATIONAL TRADE	Core	4	0	0	4

Preamble

This course explores the effect of cultural differences on management in organizations worldwide. It aims to provide students with an understanding of the challenges and opportunities that arise when people of diverse cultural backgrounds interact in the work place.

Prerequisite: Nil

Course outcome: After the successful completion of the course, the student will be able to:

CO 1	Understand the cross-cultural business environment.
CO 2	Analyze national and international culture.
CO 3	Evaluate negotiation styles and strategies in different cultural contexts.
CO 4	Resolve multicultural conflicts in teamwork.
CO 5	Adapt leadership practices to diverse cultural settings.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO1	3	2	1	3	3
CO2	2	3	3	2	3
CO3	3	3	2	3	2
CO4	3	2	3	2	3
CO5	2	3	3	3	3

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA210- CROSS CULTURAL MANAGEMENT IN INTERNATIONAL TRADE

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Explain the importance of cross-cultural management.
2. Write the layers of mental programming.
3. Define international negotiation.
4. Describe multicultural teams in shipping.
5. Write a short note on leadership styles in logistics.

(5 x 2=10marks)

PARTB

Answer any **three** questions. Each question carries 10 marks

6. Illustrate the role of cultural intelligence in effective cross- cultural management.
7. Analyse cultural frame works and models in shipping and logistics.
8. Compare negotiations tyles and strategies in different cultural contexts.
9. Develop strategies for resolving multicultural team conflicts in global environment.
10. Managing cross cultural change and innovation in Shipping and Logistics is indispensable. Justify

(3 x10 =30 marks)

PART C

Compulsory question. This question carries 20 marks

11. Different approaches to professional communication are just one of the innumerable differences in workplace norms from around the world. CT Business Travel has put together a useful infographic for a quick reference of cultural differences in business etiquette globally. For instance, the formality of address is a big consideration when dealing with colleagues and business partners from different countries. Do they prefer titles and surnames or is being on a first-name basis acceptable? While it can vary across organizations, Asian countries such as South Korea, China, and Singapore tend to use formal "Mr./Ms. Surname," while Americans and Canadians tend to use first names. When in doubt, erring on the side of formality is generally safest. The concept of punctuality can also differ between cultures in an international business environment. Different ideas of what constitutes being "ontime" can often lead to misunderstandings or negative cultural perceptions. For example, where an American may arrive at a meeting a few minutes early, an Italian or Mexican colleague may arrive several minutes or more after the scheduled start time (and still, be considered "ontime").

Along with differences in etiquette, come differences in attitude, particularly towards things like work place confrontation rules and regulations, and assumed working hours. While some may consider working long hours assign of commitment and achievement, others may consider these extra hours a demonstration of a lack of efficiency or the de-prioritization of essential family or personal time.

Discuss the strategies to overcome international cultural differences for effective cross-cultural management.

(1 x20 =20 marks)

Syllabus

Module1	Overview of Cross-Culture Management Understanding the importance of cross cultural management in shipping and logistics, Cultural dimensions and their impact on business interactions, Cultural intelligence, and its role in effective cross-cultural management.
Module2	Cultural Analysis in Shipping and Logistics Analyzing national and international cultures, Identifying cultural differences in communication styles, attitudes and behaviors, Cultural frameworks and models for understanding and comparing cultures.
Module3	Cross-Cultural Communication and Negotiation Verbal and nonverbal communication across cultures, Overcoming language and communication barriers, Negotiation styles and strategies in different cultural contexts.
Module4	Managing Diversity in Shipping and Logistics Embracing Diversity and inclusion in a multicultural workplace, developing cultural sensitivity and empathy, managing multicultural teams, and resolving conflicts.
Module5	Cross-Cultural Leadership and Change Management Leadership styles and approaches in different cultural contexts, adapting leadership practices to diverse cultural settings, Managing cross- cultural change and innovation in Shipping and Logistics.

Text Books

1. Thomas. C. D, Inkson K., (2009), *Cultural Intelligence: Living and Working Globally*. Berrett-Koehler Publishers.
2. Thomas C. D., Peterson F. M., (2017) *Cross-Cultural Management: Essential Concepts*, Sage Publications.
3. Hofstede G., Hofstede G. H., Minkov M., (2010), *Cultures and Organizations: Software of the Mind*. McGraw-Hill

References

1. Riding the Waves of Culture: Understanding Diversity in Global Business by Fons Trompenaars and Charles Hampden-Turner.
2. Bridging Cultural Conflicts: A New Approach for a Changing World by Michelle Le Baron.

3. The Culture Map: Decoding How People Think, Lead, and Get Things Done Across Cultures by Erin Meyer.
4. Managing Cultural Differences: Global Leadership Strategies for the 21st Century by Robert T. Moran, Philip R. Harris and Sarah V. Moran.
5. The Art of Cross-Cultural Leadership: Exploring the Influence of Culture on Managerial Leadership by Tatiana S. Manolova, Linda F. Edelman, and T. Lynda-Gonzalez.
6. Leading Across New Borders: How to Succeed as the Center Shifts" by Ernest Gundling.

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	Overview of Cross-Culture Management	
1.1	Understanding the importance of cross-cultural Management in shipping and logistics	4
1.2	Cultural Dimensions and their impact on Business interactions	3
1.3	Cultural intelligence and its role in effective cross-cultural management.	3
2	Cultural Analysis in Shipping and Logistics	
2.1	Analyzing national and international cultures	3
2.2	Identifying cultural differences in communication styles, Attitudes and behaviors	3
2.3	Cultural frameworks and models for understanding and Comparing cultures	3
3	Cross-Cultural Communication and Negotiation	
3.1	Verbal and nonverbal communication across cultures	3
3.2	Overcoming language and communication barriers	3
3.3	Negotiation styles and strategies in different cultural contexts	3
4	Managing Diversity in Shipping and Logistics	
4.1	Embracing Diversity and inclusion in a multicultural workplace	3
4.2	Developing cultural sensitivity and empathy	3
4.3	Managing multicultural teams and resolving conflicts	4
5	Cross-Cultural Leadership and Change Management	
5.1	Leadership styles and approaches in different cultural contexts	4
5.2	Adapting leadership practices to diverse cultural settings	3
5.3	Managing cross-cultural change and innovation in Shipping and Logistics	3
	Total	48 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA352	PROJECT & COMPREHENSIVE VIVA VOCE	Core	0	0	10	5

Preamble

During the fourth semester, every student of the MBA programme is required to undertake a project under the guidance and supervision of a faculty member and a report (in the format supplied by the university) on the same has to be submitted before the commencement of the fourth semester university examination. The project work should be based on an actual problem and the solution methodology should be research oriented. The contact hours required for the completion of the project is notionally fixed at 160 hours, distributed over a continuous period of two months. Students will be deputed for the project work during the fourth semester. Total marks allotted for the course is 200. Out of this, 100 marks will be awarded based on an internal evaluation and the remaining 100 marks will be awarded by external evaluation. The external evaluation, for 100 marks, will be conducted by examiners duly appointed by the University for the purpose. The project helps the student to get an understanding of research orientation of business functions like HR, Marketing, Finance, Operations and Information Systems.

Course Outcomes: After the completion of the course the student will be able to:

CO 1	Integrate theory and practice of management
CO 2	Understand the dynamics of a specific industry.
CO 3	Acquaint themselves with various issues pertaining to an industry.
CO 4	Provide a cross-functional perspective of the functioning of a business enterprise and industry

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	2	2	1	2	1
CO 2	2	1	1	1	1
CO 3	2	1	2	1	2
CO 4	1	1	2	1	2

Mark distribution

Total Marks	CIE	ESE
200	100	100

Assessment Pattern

The internal evaluation (100 marks) will have to be carried out by a panel constituted by the college/institute comprising of:

1. HOD / Sr. Faculty member
2. Project Supervisor (Guide)
3. Subject expert

The external evaluation will be conducted by the examiners appointed by the University comprising of:

1. HOD / Sr. Faculty member
2. Project Supervisor (Guide)
3. External expert

The criteria for evaluation will be as detailed below:

Internal Evaluation 100 marks (by the Institute)

Criteria	Marks
Guide	40
Internal Evaluation by Committee <ul style="list-style-type: none"> Two Internal Evaluations* (15 x 2 =30 marks) Project report# (30 marks) 	60
Total	100

*Based on two presentations one at the beginning of the semester and the second one at the time of second internal examinations for the semester. The first presentation shall highlight the topic, objectives, methodology, design and expected results (wherever applicable). The second presentation will be based on the progress of the work including the then status of completion of the work, the obtained results etc.

Committee should ensure that the plagiarism level of the project report is below acceptable levels (as per the discretion of the committee) and the work is genuine.

External Evaluation 100 marks (by the University)

Criteria	Marks
Project Evaluation based on Presentation	50
Comprehensive Viva Voce (Based on MBA curriculum focussing on the specialization opted by the student)	50
Total	100

Course Code	Course Name	Category	L	T	P	Credit
20MBA372	SUSTAINABLE LOGISTICS AND GREEN SUPPLY CHAIN MANAGEMENT	Elective	3	0	0	3

Preamble

This course gives an insight into the importance of integrating environmental considerations into logistics and supply chain practices. It recognizes the need to address the environmental impacts associated with transportation, warehousing, packaging, and other activities involved in the movement of goods.

Prerequisite: NIL

Course outcome: After the successful completion of the course the student will be able to:

CO 1	Understand the overview of sustainability in the shipping and logistics industry
CO 2	Analyze the impact of environmental challenges in entire logistics operations
CO 3	Interpret strategies for sustainable logistics and green supply chain management
CO 4	Identify the concept of reverse logistics and closed-loop supply chain management
CO 5	Application of technological innovations in sustainable logistics

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	3	1
CO 2	2	2	2	3	1
CO 3	3	3	2	2	3
CO 4	3	3	3	2	2
CO 5	2	2	3	3	2

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS
MANAGEMENT) DEGREE EXAMINATION
20MBA372- SUSTAINABLE LOGISTICS AND GREEN SUPPLY CHAIN
MANAGEMENT

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Define the concept of sustainability in logistics operations.
2. Explain the concept of the Triple bottom-line approach of sustainability.
3. Illustrate the concept of reverse logistics.
4. Define the main elements of sustainable logistics.
5. Describe the concept of green logistics.

(5 x 2=10marks)

PART B

Answer any **three** questions. Each question carries 10 marks

6. “Environmental challenges drastically affect supply chain operations” Elucidate.
7. Illuminate strategies for effective sustainable logistics.
8. Explicate the benefits of a closed-loop supply chain.
9. Illustrate the impact of supply chain software solutions in optimizing supply chain operations.
10. Elucidate emerging trends in sustainable logistics.

(3 x 10=30marks)

PART C

Compulsory Question. This question carries 20 marks

11. Company X is a global retail company with operations in multiple countries. They operate a vast supply chain network, including sourcing raw materials, manufacturing products, and distributing them to retail stores worldwide. Company X recognizes the importance of sustainable practices and has implemented various initiatives to promote sustainable logistics within their operations.
 - a) Specify certain sustainable logistics initiatives for optimizing the logistics operations of Company X
(1 x 10=10marks)
 - b) What are the ultimate results Company X can generate by implementing logistics initiatives?
(1 x 10=10marks)

Syllabus	
Module 1	Sustainable Logistics and Green Supply Chain: Overview of sustainability in the shipping and logistics industry-Triple bottom line approach – Environmental, social, and economic aspects of sustainability-Regulatory Frameworks and international standards for sustainable logistics.
Module 2	Environmental Challenges in Logistics Operations: Carbon Emissions and climate change implications- Energy Management and Efficiency in Transportation and Warehousing- Waste Management and pollution control in logistics activities- Life cycle assessment and environmental impact analysis.
Module 3	Strategies for Sustainable Logistics and Green Supply Chain: Green transportation modes and modal shift strategies- Sustainable packaging and materials management- Green procurement and supplier selection- Sustainable distribution network design and optimization.
Module 4	Circular Economy and Reverse Logistics: Circular economy principles and their applications in logistics-Reverse logistics and product returns management- Remanufacturing and recycling strategies-Closed-loop supply chains and waste reduction.
Module 5	Technology and Innovation in Sustainable Logistics: Internet of Things (IoT) and sensor-based technologies for green logistics- Big data analytics and predictive modeling for sustainability- Green supply chain software solutions- Innovation and emerging trends in sustainable logistics.

Text Book

1. Chopra, S., & Meindl, P. (2020). *Supply Chain Management: Strategy, Planning, and Operation*. Pearson.
2. Walker, H., & Jones, D. (2012). *Sustainable Supply Chain Management: An Introduction*. Routledge.
3. Carter, C. R., & Rogers, D. S. (2008). *A Framework of Sustainable Supply Chain Management: Moving toward New Theory*. International Journal of Physical Distribution & Logistics Management.

References

1. Sarkis, J. (2012). *Green Supply Chain Management*. Springer.
2. Seuring, S., & Gold, S. (2012). *Conducting Content Analysis Based on Textual Big Data: A Step-by-Step Guide*. Springer.
3. Srivastava, S. K. (2007). *Green Supply-Chain Management: A State-of-the-Art Literature Review*. International Journal of Management Reviews.

Course Contents and Lecture Schedule

No	Topic	No. of Lectures (in hours)
1	Sustainable Logistics and Green Supply Chain	
1.1	Overview of sustainability in the shipping and logistics industry	2
1.2	Triple bottom line approach – Environmental, social, and economic aspects of sustainability, Regulatory Frameworks	3
1.3	International standards for sustainable logistics, Green Transportation	2
1.4	Last-Mile Delivery Optimization, Collaboration and Supply Chain Integration, Packaging Optimization	2
2	Environmental Challenges in Logistics Operations	
2.1	Carbon Emissions and climate change Implications, Energy Management and Efficiency in Transportation and Warehousing	3
2.2	Waste management and pollution control in logistics activities, Recycling, and reuse, Hazardous material management, Transportation optimization	3
2.3	Life cycle assessment and environmental impact analysis, how LCA can be integrated into a sustainable supply chain	2
3	Strategies for Sustainable Logistics and Green Supply Chain	
3.1	Green transportation modes and modal shift strategies, Electric Vehicles (EVs), Hybrid Vehicles, Intermodal Transportation, Demand- Responsive Transportation, Sustainable packaging, and materials management	3
3.2	Green procurement and supplier selection, Sustainable distribution network design and optimization	2
4	Circular Economy and Reverse Logistics	
4.1	Circular economy principles and their applications in logistics	2
4.2	Reverse logistics and product returns management, Remanufacturing and recycling strategies, Material recovery, Extended producer responsibility (EPR)	3
4.3	Closed-loop supply chains and waste reduction, Circular Economy, Extended Producer Responsibility (EPR),	2
5	Technology and Innovation in Sustainable Logistics	
5.1	Internet of Things (IoT) and sensor-based technologies for green logistics, GPS Tracking, Environmental Monitoring Sensors, Smart Packaging Sensors, Motion, and Proximity Sensors	3
5.2	Big data analytics and predictive modeling for sustainability, Green supply chain software solutions	2
5.3	Innovation and emerging trends in sustainable logistics- Optimization and Route Planning, Last-Mile Delivery Solutions, Sustainable Packaging, Collaborative Logistics, and Shared Resources	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA374	SUSTAINABILITY IN THE MARITIME INDUSTRY	Elective	3	0	0	3

Preamble

This syllabus aims to provide an introductory overview of sustainability in the maritime industry, covering various dimensions and aspects of sustainable development. It explores the importance of sustainability in the maritime sector, emphasizing the need to balance environmental, social, and economic considerations. The syllabus also highlights the role of the United Nations' Sustainable Development Goals (SDGs) in guiding maritime sustainability efforts.

Prerequisite: Nil

Course outcome: After the successful completion of the course, the student will be able to:

CO 1	Explain the importance of sustainability in the maritime industry.
CO 2	Identify the impacts of climate change and greenhouse gas emissions in shipping.
CO 3	Assess the economic sustainability and financial aspects of the maritime industry.
CO 4	Evaluate the applications of renewable energy in shipping.
CO 5	Discuss the role of corporate social responsibility in the maritime industry.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	3	1
CO 2	2	2	3	2	3
CO 3	2	3	2	3	2
CO 4	1	2	2	2	3
CO 5	2	3	3	3	1

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA374- SUSTAINABILITY IN THE MARITIME INDUSTRY

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Importance of sustainability in the maritime industry
2. Air and water pollution in maritime operations
3. Social Responsibility and labor conditions in the maritime industry
4. Renewable energy applications in shipping
5. Renewable energy applications in shipping

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries *10 marks*

6. Describe the role of the maritime industry in achieving sustainable development goals.
7. Evaluate the importance of energy efficiency and alternative fuels in reducing greenhouse gas emissions from shipping.
8. Analyze the role of sustainable supply chain management in achieving maritime sustainability.
9. Explain the importance of waste management and recycling in promoting sustainability in ports and vessels.
10. Analyze the role of corporate social responsibility in promoting sustainability in the maritime industry

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries *20 marks*

11. Maersk Line, a global container shipping company, has been actively implementing sustainability initiatives to reduce its environmental impact and promote sustainable practices in the maritime industry. This case study explores some of the sustainable shipping practices implemented by Maersk Line and their impact on the industry.

Initiative 1: Fuel Efficiency and Emission Reduction

Maersk Line has made significant efforts to improve fuel efficiency and reduce greenhouse gas emissions from its fleet. One of its key initiatives is the implementation of slow steaming, where vessels operate at lower speeds to achieve fuel savings. Additionally, Maersk Line has invested in energy-efficient vessel designs, such as the Triple-E class ships, which are among the largest and most energy-efficient container vessels in the world. These initiatives contribute to reducing carbon dioxide emissions and minimizing the environmental impact of shipping operations.

Initiative 2: Alternative Fuels and Technologies

Maersk Line recognizes the importance of transitioning to low-carbon and sustainable fuels. The company has been actively exploring and piloting the use of alternative fuels such as biofuels and methanol. It has also partnered with suppliers and industry stakeholders to develop and test new technologies, including the use of wind-assisted propulsion systems and onboard energy-saving devices. By investing in alternative fuels and innovative technologies, Maersk Line aims to reduce its reliance on fossil fuels and promote the development of sustainable shipping practices.

Question 1: How does Maersk Line promote fuel efficiency and emission reduction in its shipping operations?

(10 marks)

Question 2: What are some of the alternative fuels and technologies that Maersk Line has been exploring in its shipping operations?

(10 marks)

Syllabus

Module 1	Introduction to Sustainability in the Maritime Industry Overview of sustainability concepts and principles - Importance of sustainability in the maritime industry - Sustainable development goals and maritime sustainability
Module 2	Environmental Challenges and Practices Climate change and greenhouse gas emissions in shipping - Air and water pollution in maritime operations - Energy efficiency and alternative fuels in shipping - Ballast water management and marine biodiversity
Module 3	Social and Economic Dimensions of Sustainability Social Responsibility and labor conditions in the maritime industry - Maritimesafety and security - Economic sustainability and financial aspects – Sustainable supply chain management
Module 4	Green Technologies and Innovations Electric and hybrid propulsion systems - Renewable energy applications in shipping - Waste management and recycling in ports and vessels
Module 5	Regulatory Framework and Industry Initiatives International regulations and conventions (e.g., IMO) - Regional sustainability initiatives and policies - Port sustainability programs and certifications - Corporate social responsibility in the maritime industry

Text Books

1. Sustainable Maritime Transportation and Exploitation of Sea Resources, Weimin Ma
2. Green Ports: Inland and Seaside Sustainable Transportation Strategies, Joe Borg, Paul J. Depasquale
3. Maritime Work Law Fundamentals: Responsible Shipowners, Reliable Seafarers, Frank Stevens, Frank Heemskeerk
4. Handbook of Recycling: State-of-the-art for Practitioners, Analysts, and Scientists, Ernst Worrell, Markus A. Reuter, Bernd G. V. Lotsch
5. Port Management and Operations, Maria G. Burns, Patrick Alderton, Khalid Bichou, Stephen Pettit

References

1. Sustainable Maritime Transportation and Exploitation of Sea Resources" by Weiliang Zhang and Tommy Y. Lo
2. "Sustainable Shipping: A Cross-Disciplinary View" edited by Michael Roe and Deborah Greaves
3. "Maritime Economics: Management and Marketing" by Martin Stopford
4. "Maritime Logistics: A Complete Guide to Effective Shipping and Port Management" by Dong-Wook Song and Photis Panayides
5. "Sustainable Shipping and the Law" by Susan L. Sakmar

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	Introduction to Sustainability in the Maritime Industry	
1.1	Overview of sustainability concepts and principles	2
1.2	Importance of sustainability in the maritime industry	2
1.3	Sustainable development goals and maritime sustainability	3
2	Environmental Challenges and Practices	
2.1	Climate change and greenhouse gas emissions in shipping	2
2.2	Air and water pollution in maritime operations	1
2.3	Energy efficiency and alternative fuels in shipping	2
2.4	Ballast water management and marine biodiversity	3
3	Social and Economic Dimensions of Sustainability	
3.1	Social Responsibility and labor conditions in the maritime industry	2
3.2	Maritime safety and security	1
3.3	Economic sustainability and financial aspects	2
3.4	Sustainable supply chain management	2
4	Green Technologies and Innovations	
4.1	Electric and hybrid propulsion systems	2
4.2	Renewable energy applications in shipping	2
4.3	Waste management and recycling in ports and vessels	2
5	Regulatory Framework and Industry Initiatives	
5.1	International regulations and conventions (e.g., IMO)	2
5.2	Regional sustainability initiatives and policies	2
5.3	Port sustainability programs and certifications	2
5.4	Corporate social responsibility in the maritime industry	2
	Total	36 Hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA376	INDIAN CUSTOMS LAW -II	Elective	3	0	0	3

Preamble

This course helps the students to gain a solid understanding of key concepts in customs tariff and law. The course helps the students to get insights into The Customs Tariff Act 1975, its rules, regulations, and documentation.

Prerequisite: Nil

Course outcome: After the successful completion of the course, the student will be able to:

CO 1	Understand the taxes and charges of The Customs Tariff Act, 1975.
CO 2	Asses the power of governments on the Customs Tariff Act.
CO 3	Describe the sections of the Customs Tariff Act.
CO 4	Evaluate the amendments of the Customs Tariff Act.
CO 5	Develop documentation for exporter and importer licenses.

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	1	1
CO 2	2	1	1	2	2
CO 3	2	3	2	2	2
CO 4	1	2	1	2	1
CO 5	2	1	1	2	1

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA376- INDIAN CUSTOMS LAW -II

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

1. Describe the need for The Customs Tariff Act, of 1975.
2. List the protective duties of The Customs Tariff Act, of 1975.
3. Define anti-dumping duty.
4. Explain the rules to be laid before Parliament.
5. Write a short note on controls for the export of specified goods.

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

6. Illustrate the Duties specified in the Schedules to be levied, in THE CUSTOMS TARIFF ACT, 1975.
7. Explain the Power of Central Government to levy protective duties, in THE CUSTOMS TARIFF ACT, 1975.
8. Describe the Power of the Central Government to apply safeguard measures, in THE CUSTOMS TARIFF ACT, 1975.
9. Explain the power of the Central Government to alter duties under certain circumstances, in THE CUSTOMS TARIFF ACT, 1975.
10. Describe the power of central government to make an order and announce foreign trade policy, in THE FOREIGN TRADE 1992.

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

11. Illustrate Emergency power to Central Government to increase or levy export duties, in THE CUSTOMS TARIFF ACT, 1975.

(1 x 20 = 20 marks)

Syllabus

Module 1	THE CUSTOMS TARIFF ACT, 1975 Need and importance, Short title, extent, and commencement. Duties specified in the Schedules to be levied, Levy of additional duty equal to excise duty, sales tax, local taxes, and other charges. Levy of duty where standard rate and preferential rate are specified.
Module 2	Levy of a lower rate of duty under a trade agreement, Power of Central Government to levy protective duties in certain cases, Duration of protective duties and power of Central Government to alter them, Emergency power to Central Government to increase or levy export duties
Module 3	Emergency power of Central Government to increase import duties, Power of Central Government to apply safeguard measures, Countervailing duty on subsidized articles, Anti-dumping duty on dumped articles, Refund of anti-dumping duty in certain cases, NO levy under section 9 or section 9A in certain cases, Appeal.
Module 4	Rules to be laid before Parliament, Power of Central Government to alter duties under certain circumstances, Power of Central Government to amend First Schedule, Repeal, and saving, Consequential amendment of Act 52 of 1962.
Module 5	THE FOREIGN TRADE (DEVELOPMENT AND REGULATION) ACT, 1992 Short title and commencement, Definitions, power of central government to make an order and announce foreign trade policy, importer-exporter code number, and license, quantitative restrictions, search, seizure, penalty and confiscation, controls on the export of specified goods, services, and technology, appeal and review, miscellaneous.

Text Books

1. BDP Customs Tariff with IGST and Foreign Trade Policy (Set of 3 Vols) By Anand Garg Edition 2023
2. Foreign Trade (Development and Regulation) Act, 1992, January 2016 by Universal Law Publishing
3. Customs Act, 1962 Bare Act, (Print/eBook), by EBC.
4. The Customs Act, 1962 Bare Act with Short Comments Edition 2021.
5. Customs Law Manual 2024-25 (In 2 Volumes), R K Jain,

References

1. Customs Tariff of India 2024-25 (In 2 Volumes) by R K Jain Edition: 79th Edition, 2024
2. BIGs Easy Reference Customs Manual for Imports – Exports by Arun Goyal, Asim Goyal Edition: 5th Edition, Feb 2023

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	THE CUSTOMS TARIFF ACT, 1975	
1.1	Need and importance, Short title, extent, and commencement	1
1.2	Duties specified in the Schedules to be levied	2
1.3	Levy of additional duty equal to excise duty, sales tax, local taxes, and other charges	2
1.4	Levy of duty where standard rate and preferential rate are specified	2
2		
2.1	Levy of a lower rate of duty under a trade agreement	1
2.2	Power of Central Government to levy protective duties in certain cases	2
2.3	Duration of protective duties and power of Central Government to alter them	2
2.4	Emergency power to Central Government to increase or levy export duties	2
3		
3.1	Emergency power of the Central Government to increase import duties	1
3.2	Power of Central Government to apply safeguard measures	2
3.3	Countervailing duty on subsidized articles, Anti-dumping duty on dumped articles	2
3.4	Refund of anti-dumping duty in certain cases	2
3.5	NO levy under section 9 or section 9A in certain cases, Appeal	1
4		
4.1	Rules to be laid before Parliament	1
4.2	Power of Central Government to alter duties under certain circumstances	2
4.3	Power of Central Government to amend First Schedule	2
4.4	Repeal and saving, Consequential amendment of Act 52 of 1962	2
5	THE FOREIGN TRADE (DEVELOPMENT AND REGULATION) ACT, 1992	
5.1	Short title and commencement, Definitions, power of central government to make an order and announce foreign trade policy	2
5.2	importer-exporter code number and license, quantitative restrictions	2
5.3	search, seizure, penalty and confiscation, controls on the export of specified goods	1
5.4	services and technology, appeal and review, miscellaneous	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA378	INTERNATIONAL LOGISTICS	Elective	3	0	0	3

Preamble

This elective course explores international logistics and provides an opportunity for the student to gain a deep understanding of global supply chain complexities, international trade and regulations, freight forwarding and transportation, international warehousing and inventory management, and global logistics network design. By developing critical thinking and problem-solving skills, students learn to implement effective logistics strategies in the evolving global marketplace, contributing to organizational success.

Prerequisite: Nil

Course Outcomes: After the completion of the course the student will be able to:

CO1	Recall the complexities and challenges inherent in global supply chains
CO2	Understand the global practices and regulations involved in the international trade
CO3	Identify modes and means involved in freight forwarding
CO4	Analyse international warehouse and inventory management principles
CO5	Evaluate Global Logistics Network Design models

Assessment Pattern

Bloom's Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper
APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS
MANAGEMENT) DEGREE EXAMINATION

20MBA378- INTERNATIONAL LOGISTICS

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

- 1 Explain demand forecasting
- 2 List out a few international trade agreements
- 3 What do you mean by freight forwarding?
- 4 Recall the customs procedures involved in EXIM
- 5 Mention basics in the optimization of global logistics networks

(5 x 2 marks = 10 marks)

PART B

Answer any *three* Questions. Each question carries 10 marks

- 6 Explain the nature, significance, and components of international logistics.
- 7 What are the different shipping modes? Explain the legal, regulatory, and compliance procedures in International Trade.
- 8 Critically evaluate the role and importance of freight forwarders.
- 9 Compare and contrast the trends in location decisions for facilities.
- 10 “Compliance with regulations reduces half the headaches in logistics management.” How far this statement is true according to you? Prove your arguments with suitable examples from the global logistics domain.

(3 x 10 marks = 30 marks)

PART C

Compulsory Question. This question carries 20 marks

- 11 Walmart, the world’s largest retailer, faced a significant challenge in optimizing its last-mile delivery operations. With a vast network of stores and increasing online orders, ensuring efficient and timely delivery to customers’ doorsteps became crucial for maintaining competitiveness and customer satisfaction. Walmart needed to reduce delivery lead times to meet customer expectations. Being a logistics student how could you solve this problem and suggest solutions (technology dependent or not) to balance delivery speed with cost efficiency and scalability?

(1 x 20 marks = 20 marks)

Syllabus	
Module 1	Global Supply Chain Management Understanding the complexities of global supply chains; Supplier management; Demand forecasting; Coordination across multiple countries and regions
Module 2	International Trade and Regulations Exploring legal, regulatory, and compliance aspects of international trade; Customs procedures; Trade agreements; Tariffs; Import/export regulations
Module 3	Freight Forwarding and Transportation Various modes of transportation in international logistics such as ocean shipping, air freight, road transport, and rail transport; Freight forwarders and logistics services providers.
Module 4	International Warehousing and Inventory Management Warehouse management; Inventory Management; Storage; Cargo handling; Cross-border distribution
Module 5	Global Logistics Network Design Analyze the design and optimization of global logistics networks; Location decisions for facilities; Transportation routing; Network modeling

Text Books

- 1 John Mangan, Chandra Lalwani, Tim Butcher (2011), Global Logistics and Supply Chain Management, (2nd edition), John Wiley & Sons
- 2 Pierre A David, Eun-Su Lee, Kaan Katircioglu (2013), International Logistics: The Management of International Trade Operations, (4th edition), Cicero
- 3 Douglas Long (2003), International Logistics: Global Supply Chain Management, (3rd edition), Springer

References

- 1 Robert Chira (2016), International Logistics Management, Author house
- 2 Ram Singh (2015), International Trade Logistics, (1st edition), Oxford University Press

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	Global Supply Chain Management	
1.1	Understanding the complexities of global supply Chains	2
1.2	Supplier management	2
1.3	Demand forecasting	2
1.4	Coordination across multiple countries and regions	1
2	International Trade and Regulations	
2.1	Exploring legal, regulatory, and compliance aspects of international trade	2
2.2	Customs procedures	2
2.3	Trade agreements	2
2.4	Tariffs	2
2.5	Import/export regulations	2
3	Freight Forwarding and Transportation	
3.1	Various modes of transportation in international logistics such as ocean shipping, air freight, roadtransport, and rail transport.	2
3.2	Freight forwarders and logistics services providers	2
4	International Warehousing and Inventory Management	
4.1	Warehouse management	2
4.2	Inventory Management	2
4.3	Storage	1
4.4	Cargo handling	1
4.5	Cross-border distribution	1
5	Global Logistics Network Design	
5.1	Analyze the design and optimization of global logistics networks	2
5.2	Location decisions for facilities	2
5.3	Transportation routing	2
5.4	Network modeling	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA380	MARITIME CYBER SECURITY MANAGEMENT	Elective	3	0	0	3

Preamble

Maritime Cyber Security Management emerges as a vital discipline within the maritime industry. This field encompasses a range of practices, protocols, and strategies aimed at mitigating cyber risks, ensuring the resilience of maritime systems, and maintaining the overall safety and security of vessels, ports, and maritime infrastructure.

Prerequisite: Nil

Course outcome: After the successful completion of the course, the student will be able to:

CO 1	State the basic terms and concepts of cyber security in Shipping and logistics
CO 2	Understand the operational technologies and vulnerabilities
CO 3	Illustrate the maritime risk assessment and mitigation measures
CO 4	Analyze the cyber security auditing and the related tools
CO 5	Evaluate the role of cyber security and safety management system

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	1	3	3
CO 2	2	3	3	2	3
CO 3	3	3	2	3	2
CO 4	3	2	3	2	3
CO 5	2	3	3	3	3

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA380- MARITIME CYBER SECURITY MANAGEMENT

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

- 1 Define Cyber security.
- 2 Explain third-party vulnerabilities.
- 3 Define GIS.
- 4 Describe Cyber security audit
- 5 Explain CSP

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

- 6 Explain the importance of cyber security for shore-based maritime industry activities
- 7 Analyze the IT shipboard systems and vulnerabilities and potential consequences of cyber-attacks and comment on them.
- 8 Describe the different types and stages of cyber-attacks against the shipping industry.
- 9 Discuss the cyber security auditing process in detail
- 10 Elucidate the functions of a Security Operations Centre (SOC).

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

- 11 A large cargo ship, "MV Neptune," is sailing in international waters, transporting valuable goods from one port to another. The vessel's computer systems are connected to the Internet for various operational purposes, such as navigation, communication, and cargo management. Unknown to the crew, a group of hackers targets the vessel's systems in an attempt to gain unauthorized access. The hackers exploit a vulnerability in the vessel's navigation system software, successfully breaching its defenses. They gain control over critical functionalities, including the propulsion and steering systems. The crew on board "MV Neptune" becomes aware of the breach when they notice unusual behavior in the vessel's operations and receive alarming notifications on their monitoring screens.

In this scenario, try to explore the given situation and comment on necessary steps and measures that can be taken to solve the cyber security breach.

(1 x 20 = 20 marks)

Syllabus

Module 1	Introduction to Maritime Cyber Security Management: Terms and definitions of cyber security; The importance of cyber security for ships - The importance of cyber security for shore-based maritime industry activities; Threat actor motivation specifically against the shipping industry
Module 2	Information and Operational Technology Systems and 3rd Party Vulnerabilities: IT shipboard systems – vulnerabilities and potential consequences of cyber-attacks OT shipboard systems - vulnerabilities and potential consequences of cyber-attacks 3rd party (vendors, insurers, clients, ship brokers) vulnerabilities.
Module 3	Maritime Cyber Risk Assessment and Mitigation Measures: The importance of risk assessment on cyber-attacks, Risk assessment and management tools (KPIs), Types (APT, no-targeted), and stages of cyber-attacks against the shipping industry. Applied GIS and spatial data analytics governance
Module 4	Cyber security auditing and compliance: Importance of cyber security audits – Process – Tools - Types; Compliance audits, Penetration audits, Risk assessment audits.
Module 5	Cybersecurity and Safety Management System (SMS): Development of a comprehensive shipboard cybersecurity plan (CSP); Review of the CSP - Monitoring and auditing the CSP - Role of a cybersecurity officer (CySO); Functions of a Security Operations Centre (SOC) - Cyber Incident Investigation and Emergency - Response mechanisms

Text Books

- 1 "Maritime Cybersecurity: A Guide for Leaders and Managers" by Gary C. Kessler: (2019) Routledge publishers.
- 2 "Maritime Security and the Law of the Sea" by Natalie Klein and Joanna Mossop (2019), Oxford university press.
- 3 "Maritime Cybersecurity: A Comprehensive Guide for Ships and Ports" by Philip Whitford (2017), CreateSpace Independent Publishing Platform

References

- 1 "Maritime Security and Cybersecurity: A Systems Approach" by George L. Wrenn, (2017), Elsevier Publications.
- 2 "Maritime Piracy and the Construction of Global Governance" by Michael J. Struett, (2011), Routledge Publishers

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	Introduction to Maritime Cyber Security Management	
1.1	Introduction	2
1.2	Terms and definitions of cyber security; The importance of cyber security for ships	2
1.3	The importance of cyber security for shore-based maritime industry activities	2
1.4	Threat actor motivation specifically against the shipping industry	1
2	Information and Operational Technology Systems and 3rd Party Vulnerabilities	
2.1	Introduction to Information and Operational Technology Systems and 3rd-Party Vulnerabilities	2
2.2	Operational Technology Systems and 3rd Party Vulnerabilities	2
2.3	IT shipboard systems and vulnerabilities and potential consequences of cyber-attacks	1
2.4	OT shipboard systems and vulnerabilities and potential consequences of cyber-attacks	2
2.5	3rd party (vendors, insurers, clients, ship brokers) vulnerabilities	2
3	Maritime Cyber Risk Assessment and Mitigation Measures	
3.1	The importance of risk assessment on cyber-attacks, Risk assessment, and management tools (KPIs)	2
3.2	Types (APT, no-targeted) and stages of cyber-attacks against the shipping industry	2
3.3	Applied GIS and spatial data analytics governance	2
4	Cyber security auditing and compliance:	
4.1	Introduction	2
4.2	Importance of cyber security audits	2
4.3	Cyber security auditing and Process – Tools	1
4.4	Compliance audits, Penetration audits, Risk assessment audits	2
5	Introduction to Cybersecurity and Safety Management System (SMS)	
5.1	Development of a comprehensive shipboard cybersecurity plan (CSP)	2
5.2	Review of the CSP - Monitoring and auditing the CSP	2
5.3	Role of a cybersecurity officer (CySO); Functions of a Security Operations Centre (SOC)	1
5.4	Cyber Incident Investigation and Emergency – Response mechanisms	2
	Total	36 hours

Course Code	Course Name	Category	L	T	P	Credit
20MBA382	DIGITAL TRANSFORMATION IN SHIPPING AND LOGISTICS	Elective	3	0	0	3

Preamble

This course aims to provide a comprehensive understanding of digital transformation trends and strategies specific to shipping and logistics. The course will explore the various technological innovations reshaping the industry, their implications, and the potential benefits they offer.

Prerequisite: Nil

Course outcome: After the successful completion of the course, the student will be able to:

CO 1	Understand the concept of digital transformation in the shipping and logistics industry
CO 2	Identify digital technologies and trends in shipping and logistics
CO 3	Evaluate the impact of digital transformation on shipping and logistics operations
CO 4	Assess the role of data and analytics in digital transformation
CO 5	Explore digital platforms and solutions in shipping and logistics

Mapping of course outcomes with program outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	2	3	3	2	3
CO 2	2	2	3	2	2
CO 3	2	2	2	3	2
CO 4	2	2	2	2	2
CO 5	2	2	2	3	3

Assessment Pattern

Bloom’s Category	Continuous Assessment Tests (in %)		End Semester Examination (in marks)
	1	2	
Remember	20	20	10
Understand	40	40	30
Apply	40	40	20
Analyze			
Evaluate	Can be done through Assignments/ Seminars/Mini Projects		
Create	Can be done through Assignments/ Seminars/Mini Projects		

Mark distribution

Total Marks	CIE	ESE	ESE Duration
100	40	60	3 hours

Continuous Internal Evaluation Pattern:

Attendance	: 4 marks
Continuous Assessment Test (2 numbers)	: 16 marks
Assignment/Quiz/Course project	: 10 marks
Seminar and Discussion	: 10 marks

End Semester Examination Pattern:

There will be three parts; Part A, Part B and part C. Part A contains 5 questions (one question each from each module) of 2 marks each (Students should answer all questions). Part B contains 5 questions (one question each from each module) of 10 marks each (Students have the choice of answering any three questions). Part C contains a compulsory question (can have sub-divisions) of 20 marks (from any of the modules or combination) may be in application-level or case study.

Model Question paper

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH SEMESTER MBA (SHIPPING AND LOGISTICS MANAGEMENT) DEGREE EXAMINATION

20MBA382- DIGITAL TRANSFORMATION IN SHIPPING AND LOGISTICS

Max. Marks: 60

Duration: 3 Hours

PART A

Answer *all* questions. Each question carries 2 marks.

- 1 Define Digital transportation in shipping
- 2 Explain DLT
- 3 Describe real-time tracking.
- 4 What is Predictive analytics?
- 5 List out the visualization techniques for data insights

(5 x 2 = 10 marks)

PART B

Answer any *three* questions. Each question carries 10 marks

- 6 Explain Trends and drivers of digital transformation in shipping and logistics
- 7 Describe the blockchain consortia and their industry initiatives
- 8 Explain IoT applications in maritime and logistics operations
- 9 Discuss the different Autonomous systems and robotics
- 10 Explain how, big data analytics for supply chain optimization

(3 x 10 = 30 marks)

PART C

Compulsory question. This question carries 20 marks

- 11 a. What were the key challenges faced by Shipping and Logistics Companies during the digital transformation process, and how were they addressed? Discuss any organizational, cultural, or technical hurdles encountered and the strategies employed to overcome them.
- 11 b. Discuss any value-added services, improved tracking capabilities, or partnerships facilitated by the digital transformation that led to new revenue streams or market differentiation.

(10 marks)

(10 marks)

Syllabus

Module 1	Introduction to Digital Transportation in Shipping and Logistics Overview of Digitalization and its Impact on the Industry; Trends and Drivers of digital transformation in Shipping and Logistics; Digital business models and disruptive technologies
Module 2	Blockchain and Distributed Ledger Technology Introduction to blockchain and its applications in shipping and logistics; Smart Contracts and supply chain transparency; Blockchain consortia and industry initiatives
Module 3	Internet of Things (IoT) and Sensor Technologies IoT applications in maritime and logistics operations; Connected devices and real-time tracking; Data collection, integration, and analytics
Module 4	Artificial Intelligence (AI) and Machine Learning AI applications in shipping and logistics; Predictive analytics and demand forecasting; Autonomous systems and robotics
Module 5	Data Analytics and Visualization Big data analytics for supply chain optimization; Data-driven decision-making and predictive modeling; Visualization techniques for data insights

Text Book

- 1 Monios, J. (2020). *The Routledge Handbook of Transport Economics*. Routledge.
- 2 Wang, T. (2018). *Smart Ports and Supply Chain Automation*. Springer.
- 3 Wang, S., & Ng, A. K. (2019). *Intelligent Transport Systems in Ports and Shipping*. Springer.

References

- 1 Ducruet, C., & Notteboom, T. (2020). *The Sage Handbook of Transport Studies*. SAGE Publications.
- 2 Sanchez Rodrigues, V. (2020). *Handbook of Research on Industrial Advancement in Scientific Knowledge*. IGI Global.
- 3 Song, D. W. (2009). *Maritime Logistics: Contemporary Issues*. Routledge.

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures (in hours)
1	Introduction to Digital Transportation in Shipping and Logistics	
1.1	Introduction to Digital Transportation in Shipping and Logistics;	1
1.2	Understanding the need for digital transformation in the industry	2
1.3	Overview of Digitalization and its Impact on the Industry	2
1.4	Trends and drivers of digital transformation in shipping and logistics	2
1.5	Digital business models and disruptive technologies	1
2	Blockchain and Distributed Ledger Technology	
2.1	Introduction to blockchain and its applications in shipping and logistics	2
2.2	Blockchain and Distributed Ledger Technology (DLT)	2
2.3	Applications of DLT	1
2.4	Smart Contracts and supply chain transparency concepts	1
2.5	Blockchain consortia and industry initiatives	1
3	Internet of Things (IoT) and Sensor Technologies	
3.1	Overview of the Internet of Things (IoT)	2
3.2	Introduction to different Sensor Technologies	1
3.3	IoT applications in maritime and logistics operations	2
3.4	Connected devices and real-time tracking	1
3.5	Data collection, integration, and analytics	1
4	Artificial Intelligence (AI) and Machine Learning	
4.1	Introduction to Artificial Intelligence (AI)	1
4.2	AI applications in shipping and logistics	2
4.3	Different Steps in Machine Learning	1
4.4	Predictive analytics and demand forecasting	2
4.5	Autonomous systems and robotics	1
5	Data Analytics and Visualization	
5.1	Introduction to Data Analytics and Visualization	1
5.2	Big data analytics for supply chain optimization	2
5.3	Data-driven decision-making and predictive modeling;	2
5.4	Visualization techniques for data insights	2
	Total	36 hours