COURSE OUTLINE

(1) GENERAL

SCHOOL	Maritime and Industrial Studies		
ACADEMIC UNIT	Maritime Studies		
LEVEL OF STUDIES	Postgraduate		
COURSE CODE	(NAS-SHM103)	SEMESTER	1st
COURSE TITLE	Maritime Economics		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	WEEKLY TEACHING HOURS	CREDITS
	3	7
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	General Knowledge
PREREQUISITE COURSES:	No
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/NAS-SHM103/

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

Studying maritime economics involves exploring the maritime industry's economic aspects, including shipping, ports, logistics, and related activities. Following below is the list of the learning outcomes for the participants of the course:

1. **Understanding of Maritime Industry Structure:**

Describe the structure of the maritime industry, including key players, such as ship owners, operators, charterers, and port authorities.

2. **Knowledge of Shipping Markets:**

Explain the dynamics of shipping markets, including freight rates, vessel types, and the factors influencing supply and demand in the shipping industry.

3. **Risk Management in Maritime Trade:**

Evaluate the various risks associated with maritime trade, such as operational, market, and regulatory risks.

4. Financial Analysis in Maritime Economics:
Theoretically assess the economic performance of shipping companies, evaluate investment opportunities, and understand financial instruments used in maritime finance.

5. Globalization and Maritime Trade:
Analyze the role of maritime trade in the context of globalization, understanding how global economic trends and geopolitical factors impact the industry.

6. Technological Trends and Innovations:
Stay informed about emerging technologies and innovations in the maritime sector, such as autonomous vessels, digitalization, and blockchain applications.

7. Case Studies and Practical Applications:
Apply theoretical knowledge to real-world scenarios through case studies, simulations, or internships, gaining practical insights into the challenges and opportunities in maritime economics.

8. Communication and Presentation Skills:
Develop effective communication skills to articulate and present economic analyses, market trends, and recommendations relevant to the maritime industry.

Overall, the learning outcomes from studying maritime economics should equip individuals with a comprehensive understanding of the economic dynamics and challenges within the maritime sector, preparing them for roles in shipping management, logistics, trade analysis, and related fields.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
……
Others…
…….

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
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Working in an international environment
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Respect for difference and multiculturalism
Respect for the natural environment
Production of free, creative and inductive thinking

(3) SYLLABUS

Lecture 1: Globalization and Maritime Trends

Geopolitical factors and trade tensions between major economies can influence maritime trends. Some regions may experience shifts in trade patterns as a result of changing trade agreements and geopolitical dynamics. Events such as the COVID-19 pandemic have underscored the importance of resilience in global supply chains. Maritime stakeholders are increasingly focused on developing contingency plans, diversifying supply chains, and adopting strategies to enhance resilience against disruptions

Lecture 2: Economic Theory

This lecure covers fundamental concepts in basic economics. Economics is the study of how societies allocate scarce resources to satisfy unlimited wants and needs. Here are some key concepts:

Scarcity: Scarcity is the fundamental economic problem. It occurs because resources (such as time, money, and natural resources) are limited, while human wants and needs are virtually limitless. This scarcity necessitates choices and trade-offs.

Opportunity Cost: Opportunity cost is the value of the next best alternative forgone when a decision is made. In other words, it's what you give up in order to choose something else. Understanding opportunity cost is crucial in decision-making.

Supply and Demand: The law of supply and demand is a fundamental principle in economics. It states that the price of a good or service will move toward equilibrium, where the quantity demanded equals the quantity supplied. Changes in supply and demand affect prices and quantities in markets.

Market Equilibrium: Market equilibrium is the point where the quantity of a good that buyers are willing to purchase equals the quantity that sellers are willing to produce and sell. At this point, there is no surplus or shortage in the market.

Elasticity: Elasticity measures how responsive the quantity demanded or supplied is to changes in price. If a good is elastic, consumers are more responsive to price changes. If it's inelastic, changes in price have less impact on quantity demanded.

Utility: Utility refers to the satisfaction or pleasure a consumer derives from consuming a good or service. Understanding utility is essential for analyzing consumer behavior and preferences.

Factors of Production: The factors of production are the resources used to produce goods and services. They are typically categorized into four groups: land, labor, capital, and entrepreneurship. Each plays a crucial role in the production process.

Types of Economies: Economies can be broadly categorized as traditional, command, market, or mixed. In a traditional economy, decisions are based on customs and traditions. In a command economy, the government makes most economic decisions. In a market economy, decisions are made by individuals and businesses, while a mixed economy combines elements of both.

Gross Domestic Product (GDP):GDP is a measure of a country's economic performance. It represents the total value of all goods and services produced over a specific time period within a country's borders. GDP is often used to gauge the overall health and size of an economy.

Inflation and Deflation: Inflation is the increase in the general price level of goods and services over time, leading to a decrease inthe purchasing power of money. Deflation, on the other hand, is the decrease in the general price level. Both inflation and deflation can have significant impacts on an economy.
Fiscal and Monetary Policy: Fiscal policy involves government decisions about taxation and spending to influence the economy. Monetary policy, managed by central banks, involves controlling the money supply and interest rates. Both policies aim to achieve economic stability and growth.
International Trade: The principle of comparative advantage explains why countries engage in international trade. It suggests that even if one country can produce all goods more efficiently than another, both countries can still benefit from trade by specializing in producing what they are relatively better at.
Market Structures: Markets can be categorized into different structures, including perfect competition, monopoly, oligopoly, and monopolistic competition. These structures affect pricing, output, and market behavior.
Labor Markets: Labor markets involve the supply and demand for labor. Factors such as wages, employment, and human capital play a crucial role in understanding how labor markets function.
Economic Indicators: Economic indicators, such as unemployment rates, inflation rates, and consumer confidence, provide insights into the overall health of an economy. Analysts use these indicators to assess economic performance and make predictions about future economic conditions.

Lectures 3: Seaborne Trade

Seaborne trade refers to the transportation of goods and commodities by sea. It is a crucial component of international trade and plays a vital role in the global economy. Here are key aspects of seaborne trade:
Bulk Cargo vs. Containerized Cargo: Seaborne trade involves the movement of goods in bulk or containerized form. Bulk cargo includes commodities like coal, iron ore, and grains, which are typically loaded directly into the ship's hold. Containerized cargo involves goods packed in standard-sized containers, providing efficiency in loading, unloading, and transportation.
Major Trade Routes: Seaborne trade follows established maritime routes that connect major ports and regions worldwide. Some of the busiest and most significant trade routes include the trans-Pacific route, trans-Atlantic route, and routes through major bodies of water like the Suez Canal and Panama Canal.
Key Players in Seaborne Trade: The key players in seaborne trade include shipowners, shipping companies, charterers, and port authorities. Shipowners own or lease vessels, shipping companies operate and manage fleets, charterers rent ships for specific voyages, and port authorities oversee port operations.
Types of Vessels: Various types of vessels are used in seaborne trade, depending on the nature of the cargo. Container ships are designed to carry standardized containers, while bulk carriers transport loose, unpackaged cargo. Tankers specialize in carrying liquid cargoes like oil and chemicals.
International Maritime Organization (IMO): The IMO is a specialized agency of the United Nations responsible for regulating shipping. It establishes global standards for the safety, security, and environmental performance of international shipping.

Ports and Infrastructure: Ports are essential hubs in seaborne trade, serving as points of entry and exit for goods. Efficient port infrastructure is crucial for handling cargo, facilitating smooth loading and unloading operations, and integrating with land-based transportation systems.

Economic Impact: Seaborne trade contributes significantly to the global economy. It facilitates the exchange of goods between countries, promotes economic growth, and creates employment opportunities in sectors related to shipping and maritime activities.

Technology and Innovation: Advancements in technology impact seaborne trade, including the development of larger and more efficient vessels, automation in port operations, and the integration of digital technologies for navigation, communication, and cargo tracking.

Environmental Concerns: Seaborne trade has environmental implications, including concerns about air and water pollution, ballast water management, and the impact of shipping activities on marine ecosystems. Efforts are underway to implement sustainable practices and reduce the environmental footprint of maritime transport.

Understanding seaborne trade involves considering the complex interplay of economic, logistical, regulatory, and environmental factors. It is a dynamic and vital component of the global trade network, connecting nations and facilitating the exchange of goods on a massive scale.

Lecture 4: Supply and Demand for Vessels

The supply and demand dynamics in sea transport, like any other market, are influenced by a variety of factors that impact the shipping industry. Here's an overview of how supply and demand interact in the sea transport sector:

Supply Factors:

Number and Type of Vessels: The supply of sea transport is influenced by the number and types of vessels available in the market. The construction and decommissioning of ships impact the overall capacity.

Shipping Fleet Capacity: The total capacity of the shipping fleet, including factors like the size and tonnage of vessels, determines the overall supply of sea transport services.

Newbuild Orders: The number of new orders for ship construction reflects the industry's expectations for future demand. An influx of new vessels can lead to an increase in supply.

Technological Advances: Advances in ship design and technology can impact the efficiency and capacity of vessels, influencing the overall supply of sea transport services.

Regulations: Maritime regulations, including environmental standards and safety requirements, can influence the supply side by affecting the operation and construction of vessels.

Demand Factors:

Global Trade Volumes: The primary driver of demand for sea transport is global trade. Changes in trade volumes, driven by economic growth or shifts in consumer demand, have a direct impact on the demand for shipping services.

Commodity Prices: Demand for sea transport is closely tied to the movement of commodities such as oil, coal, and grains. Fluctuations in commodity prices can affect the demand for shipping capacity.

Manufacturing and Industrial Activity: Manufacturing and industrial production impact the demand for transporting raw materials and finished goods. Increased industrial activity often leads to higher demand for shipping services.
Consumer Spending: Consumer spending patterns influence the demand for finished goods. Increased consumer demand for products can lead to higher imports and, subsequently, greater demand for sea transport.
Political and Geopolitical Factors: Political stability and geopolitical events can impact trade routes, affecting the demand for specific shipping services and potentially redirecting vessels to different regions.
Seasonal Variations: Some commodities and goods have seasonal demand patterns. For example, agricultural products might be shipped in large quantities during specific harvest seasons.
Market Equilibrium: The interaction of supply and demand determines the market equilibrium, where the quantity of shipping services supplied matches the quantity demanded. Changes in either supply or demand can lead to shifts in market conditions, affecting freight rates and profitability for shipping companies.
Freight Rates: Freight rates are influenced by the balance between supply and demand. When demand exceeds supply, freight rates tend to rise, and vice versa.

The shipping industry often experiences cyclical fluctuations in freight rates. Understanding the supply and demand dynamics in sea transport is crucial for stakeholders in the maritime industry, including shipping companies, investors, and policymakers. It helps in making informed decisions regarding fleet management, investments, and strategic planning in a dynamic and globalized market.

Lectures 5- 6: The Shipping Cycle

The shipping cycle, also known as the shipping industry's business or market cycle, is a cyclical pattern of fluctuations in freight rates and vessel values. The cycle is influenced by changes in the supply of shipping capacity (number and type of vessels) and the demand for shipping services (global trade volumes). The shipping cycle typically goes through four main phases:
Recessionary (or Trough) Phase: During this phase, there is an oversupply of shipping capacity relative to demand. Freight rates are low, and shipping companies may struggle financially. Economic downturns, reduced global trade, and excess vessel capacity contribute to this phase. During this period, some older or less efficient vessels may be scrapped or laid up.
Recovery Phase: As economic conditions improve and global trade rebounds, demand for shipping services increases. However, the oversupply of vessels persists initially, keeping freight rates from rising sharply. Shipping companies may cautiously reactivate laid-up vessels or delay scrapping decisions.
Boom (or Peak) Phase:The boom phase is characterized by a strong demand for shipping services combined with a reduced oversupply of vessels. This results in a significant increase in freight rates. Shipping companies may experience improved profitability during this phase. Investments in new vessels may increase as companies seek to capitalize on favorable market conditions.
Correction (or Topping) Phase: The correction phase occurs as a response to the increased demand for shipping services in the boom phase. Shipping companies and

investors may respond by ordering a substantial number of new vessels, leading to a renewed oversupply. Additionally, external factors like changes in global economic conditions or geopolitical events can contribute to a slowdown in demand growth. Freight rates begin to decline as supply outpaces demand once again.
After the correction phase, the shipping cycle repeats, transitioning back to the recessionary phase. It's important to note that the duration and intensity of each phase can vary, and external factors such as regulatory changes, technological advancements, or geopolitical events can influence the cycle.
Factors influencing the shipping cycle:
Global Economic Conditions: Economic growth or contraction has a direct impact on global trade volumes and, consequently, the demand for shipping services.
Supply-Side Dynamics: The construction and scrapping of vessels influence the overall supply of shipping capacity. The decisions made by shipping companies regarding new orders, scrapping, and lay-ups play a significant role.
Commodity Prices: The movement of commodity prices affects the demand for bulk shipping services. For example, higher oil prices may lead to increased demand for oil tankers.
Regulatory Changes: Environmental regulations, safety standards, and other regulatory changes can influence the industry's operating costs and investment decisions.
Geopolitical Events: Political instability, trade tensions, or conflicts in key regions can disrupt shipping routes and impact the shipping cycle.

Understanding the shipping cycle is essential for stakeholders in the maritime industry, helping them make strategic decisions regarding fleet management, investments, and risk mitigation in a cyclical and dynamic market.

Lectures 7-8: The four Shipping Markets
The maritime industry comprises various markets, each serving different functions and involving different types of transactions. The four primary shipping markets are:

Freight Market: The freight market is perhaps the most well-known and vital market in the shipping industry. It involves the transportation of goods (cargo) by sea. In this market, shipowners or charterers (those who hire a vessel) negotiate freight rates for the carriage of goods. Freight rates can be influenced by supply and demand dynamics, vessel types, cargo types, and global economic conditions. The main types of freight markets include:

- Dry Bulk Market: Involves the transportation of commodities like coal, iron ore, grains, and minerals in bulk carriers.
- Tanker Market: Deals with the transportation of liquid cargoes such as crude oil, refined products, and chemicals in various types of tankers.
- Container Market: Focuses on the movement of goods in standardized containers, with container ships playing a crucial role.

Sale and Purchase Market (S&P): The Sale and Purchase market involves the buying and selling of ships. Shipowners may decide to sell a vessel for various reasons, including fleet optimization, financial considerations, or changes in market conditions. Buyers in the S&P market can be other shipowners, investors, or even

ship recycling yards. The S&P market transactions can involve both secondhand (existing) vessels and newbuild contracts.

Newbuild Market: The Newbuild market revolves around the construction of new vessels. Shipowners or investors place orders with shipyards to build new ships tailored to their specifications. The newbuild market is influenced by factors such as market expectations, regulatory requirements, technological advancements, and financing conditions. Shipbuilding contracts outline the vessel's design, construction timeline, and financial terms. Once completed, the newbuild vessel enters the fleet and may be employed in the freight market.

Demolition Market: The Demolition market involves the scrapping of older or obsolete vessels. Shipowners may decide to scrap a ship when it becomes economically unviable or doesn't comply with current safety and environmental standards. Scrap yards purchase these vessels for recycling. The Demolition market is influenced by factors such as steel prices, regulatory changes impacting vessel standards, and the overall health of the shipping industry. Scrapping is also influenced by the freight market, as low freight rates may make older vessels less economically viable.

Understanding these shipping markets is crucial for participants in the maritime industry, including shipowners, charterers, investors, shipbuilders, and scrap yards. The interplay between these markets reflects the dynamic nature of the maritime sector, where decisions in one market can have ripple effects across the entire industry.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	E-Class, MsTeams, Email
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	*Activity* / *Semester workload* Lectures — 24 hours Self Study — 101 Course total — *125*
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Final written exam *multiple choice questionnaires, short-answer questions and open-ended questions.*

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- *Maritime Economics 4th Edition, Martine Stopford, Rourledge (Recommended)*
- *Economics of Maritime Transport: Theory & Practice, 1st Edition, ICS, Witherby*
- *The Handbook of Maritime Economics & Business, Costas Grammenos, LLP*
- *International Handbook of Maritime Economics, Kevin Cullinane, Edward Elgar*

- Related academic journals:

- *Maritime Economics & Logistics*
- *Maritime Policy*
- *Transportation Research*
- Case Studies on Transport Policy (available online)
- Scientific Journal of Maritime Research (available online)