University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Chemistry for Mariners							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
CFM101	I	Spring	3	3	2	2	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				40	40	-	20
Course Venue and Time				Wednesday 14.30-17.20			
Instructor information				**Assist. Prof. Dr. Engin Ata** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4060 engin.ata@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides an in-depth introduction to the fundamental principles of chemistry as applied to the maritime environment. Topics include atomic structure, chemical bonding, properties of metals and alloys used in ship construction, corrosion chemistry, thermochemistry, acids and bases, water chemistry, marine fuels, lubricants, coatings, and anti-fouling paints. The course emphasizes practical applications onboard ships, including solution preparation, corrosion prevention, fuel and lubricant handling, and water treatment methods. Laboratory sessions reinforce theoretical knowledge with hands-on experiments, ensuring students understand safe handling procedures and marine-specific chemical practices.
Course Aims and Objectives	The course aims to equip students with a solid understanding of fundamental chemical principles and their practical applications in the maritime environment. It emphasizes the knowledge and skills necessary to handle marine fuels, lubricants, coatings, and water systems safely and efficiently while preventing corrosion and ensuring the operational integrity of ships. • Understand and explain the fundamental concepts of chemistry, including atomic structure, chemical bonding, and thermochemistry. • Identify the properties of metals, alloys, and other materials used in ship construction and their chemical behavior. • Apply principles of corrosion chemistry and galvanic reactions to prevent material degradation onboard ships. • Prepare and manage chemical solutions, marine fuels, lubricants, and coatings safely and effectively. • Conduct water quality testing and apply water treatment methods suitable for maritime operations. • Demonstrate safe laboratory practices and proper handling of chemicals in marine applications.
Course Learning Outcomes	**CLO1:** Demonstrate a comprehensive understanding of fundamental chemical principles relevant to maritime operations. **CLO2:** Analyze the chemical properties of metals, alloys, and other materials used in ship construction, with a focus on their corrosion behavior. **CLO3:** Apply corrosion prevention and control techniques, including anodizing, cathodic protection, and galvanic protection, in maritime applications.

	CLO4: Prepare and manage chemical solutions, marine fuels, lubricants, and protective coatings in accordance with maritime standards and procedures. **CLO5:** Conduct water quality assessments and apply appropriate treatment strategies to ensure safe and effective operation of onboard systems. **CLO6:** Interpret thermochemical data, reaction kinetics, and chemical equilibria within the context of shipboard systems and operational requirements. **CLO7:** Practice safe handling, storage, transportation, and disposal of chemicals in both laboratory and shipboard environments. **CLO8:** Evaluate marine coatings, anti-fouling systems, and lubricants in terms of performance, durability, and suitability for different operational conditions. **CLO9:** Integrate chemical knowledge to diagnose and propose solutions for common chemical-related problems encountered in maritime operations. **CLO10:** Communicate chemical findings, assessments, and operational recommendations effectively in written and verbal formats relevant to maritime practice.

Content of the Course

Week	*Subject*
1	Fundamental concepts, units, and maritime-related chemical laws
2	Atomic structure and properties of elements Iron, steel and casting
3	Chemical bonding: ionic, covalent, and metallic bonds Bronze, admiralty brass and galvanic reaction
4	Solutions: preparation, concentration units, and shipboard applications Corrosion chemistry, galvanic corrosion and anodizing
5	Thermochemistry: heat, reaction rates, and equilibrium
6	Acids, bases, and their role in marine systems
7	Water chemistry: testing methods and treatment techniques
8	Midterm Exam
9	Corrosion: causes, types, and prevention methods
10	Marine fuels: properties, storage, and handling
11	Marine lubricants: types, functions, and testing
12	Marine coatings and anti-fouling paints
13	Laboratory experiments review and safety in chemical handling
14	Course review and exam preparation
15	Final Exam

Methods and Techniques used in the Course

Lectures:

- Delivery of fundamental concepts, chemical laws, and theoretical knowledge related to maritime chemistry.

Laboratory Practices:

- Hands-on experiments covering corrosion tests, solution preparation, fuel and lubricant analysis, water testing, and coating evaluations.
- Emphasis on laboratory safety and correct handling of chemicals.

Case Studies and Applications:

- Analysis of real-world maritime scenarios, including corrosion prevention, fuel handling, and water treatment onboard ships.

Group Discussions:

- Collaborative problem-solving sessions to understand chemical processes and their practical implications.

Demonstrations:

- Instructor-led demonstrations of chemical testing, marine coatings, and anti-fouling applications.

Assignments and Reports:

- Written assignments and laboratory reports to reinforce theoretical understanding and practical skills.

Quizzes and Problem Solving:

- Short exercises to evaluate comprehension of chemical principles and their applications in maritime systems.

Sample Questions

- Define the difference between ionic, covalent, and metallic bonds, and give an example of each in marine applications.
- Explain the properties of iron and steel that make them susceptible to corrosion in marine environments.
- How do you prepare a 10% NaCl solution, and what are its common shipboard applications?
- Explain the difference between molarity, molality, and percent concentration.
- Describe the mechanisms of galvanic corrosion and how to prevent it on a ship.
- Explain anodizing and its application in marine engineering.
- What are the main properties of marine diesel oil, and why are they important for engine operation?
- Compare the types of marine lubricants and their functions.
- Describe the types of anti-fouling paints and their mechanism of action.
- What factors affect the durability of marine coatings?
- Explain the relationship between temperature and reaction rate in corrosion processes.
- How does thermochemistry help in understanding fuel combustion on ships?
- List the methods for testing seawater quality on board and their importance.
- How are acidic or alkaline conditions controlled in marine water systems?
- Demonstrate the correct procedure for measuring the pH of seawater.
- How would you test for galvanic corrosion between two dissimilar metals onboard?
- A ship's steel hull shows signs of pitting. Explain the likely causes and preventive measures.
- Design a basic maintenance schedule for monitoring corrosion in engine room piping systems.

Materials Used in the Course

Textbooks & Reference Books

- "Marine Chemistry: An Introduction for Maritime Students" – Author, Year
- "Principles of Chemical Engineering in Marine Applications" – Author, Year
- "Corrosion and Corrosion Control in Marine Environments" – Author, Year
- "Marine Fuels and Lubricants: Properties, Handling, and Testing" – Author, Year
- "Water Chemistry for Ships: Testing and Treatment Methods" – Author, Year

Laboratory Materials & Equipment

- Standard chemical reagents for acids, bases, salts, and solutions
- pH meters and titration equipment
- Corrosion test kits (metal samples, salt solutions, electrodes)
- Thermochemical measurement tools (calorimeters, temperature probes)
- Marine fuel and lubricant testing kits
- Protective equipment: gloves, goggles, lab coats, and ventilation systems

Software & Online Resources

- Simulation software for chemical reactions and thermodynamic calculations
- Online databases for chemical safety data sheets (SDS)
- Interactive e-learning modules for marine corrosion and coatings

Supplementary Materials

- Laboratory manuals and experiment worksheets
- Lecture slides and handouts
- Case studies on real-world marine chemical applications

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.				✓	Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.				✓	Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.				✓	Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.				✓	Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.				✓	Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.				✓	Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.			✓		Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.			✓		Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	2	2	3	2	1	2	2	2
PO2	1	1	2	2	1	2	1	2	3	2
PO3	2	2	2	1	2	2	3	3	2	2
PO4	1	1	1	1	2	3	3	1	1	2
PO5	3	1	3	2	2	2	2	2	3	2
PO6	2	2	2	2	3	2	3	2	2	2
PO7	1	1	1	1	1	1	1	1	1	1
PO8	1	1	1	1	0	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	0	1
PO10	1	1	2	3	3	2	1	1	1	3
PO11	1	1	1	1	1	1	1	1	1	2
PO12	1	1	1	1	1	1	1	1	1	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1 – Fundamental chemical principles	Lecture, Question–Answer	Midterm Exam, Final Exam
CLO2 – Metals, alloys, corrosion properties	Lecture, Case Studies	Midterm Exam, Final Exam
CLO3 – Corrosion prevention techniques	Lecture, Laboratory Practice, Demonstration	Lab Reports, Midterm Exam, Final Exam
CLO4 – Chemical solutions, fuels, lubricants	Lecture, Hands-on Practice, Demonstration	Lab Reports, Midterm Exam, Final Exam
CLO5 – Water quality assessment & treatment	Lecture, Laboratory Practice	Quizzes, Lab Reports, Midterm Exam, Final Exam
CLO6 – Thermochemistry, kinetics, equilibrium	Lecture, Problem-Solving Sessions	Quizzes, Midterm Exam, Final Exam
CLO7 – Chemical safety & disposal	Lecture, Safety Training Session, Demonstration	Quizzes, Midterm Exam, Final Exam
CLO8 – Marine coatings & lubricants evaluation	Lecture, Case Studies, Demonstration	Midterm Exam, Final Exam
CLO9 – Diagnosing maritime chemical problems	Lecture, Case Studies, Hands-on Practice	Assignments, Midterm Exam, Final Exam
CLO10 – Communication of chemical findings	Lecture, Question–Answer, Presentation Practice	Assignments, Final Exam

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**4**	**60**
Midterm Exam	**1**	**1**	**1**
Preparation for Midterm Exam	**1**	**4**	**4**
Final Exam	**1**	**1**	**1**
Preparation for Final Exam	**1**	**4**	**4**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	**1**	**4**	**4**
Group Work	-	-	-
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	**15**	**1**	**15**
Assignment(s)/Homework/Class Works	**2**	**4**	**8**
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**112**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	-	-
Laboratory	1	10
Application	-	-
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Homework/Assignments	2	10
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	1	10
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	40
Total	**6**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: English I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
ENG101	I	Fall	3	3	3	0	0
Course type: Compulsory Elective				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				-	-	-	100
Course Venue and Time				Wednesday / 13:30 – 16:20			
Instructor information				**Aydoğan Erkan** Faculty of Maritime Studies Friday / 09:00 – 12:00 +90 (392) 650 26 00 / 4060 aydogan.erkan@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	*English I (ENG 101)* is designed to enhance students' ability to communicate effectively in English by focusing on language use in everyday life situations. The course introduces vocabulary, expressions, and basic grammatical structures at the A2/B1 level of the Common European Framework of Reference for Languages (CEFR). Emphasis is placed on developing functional language skills for real-life communication, including greetings, introductions, describing people and routines, asking for information, expressing preferences, and making simple social interactions. Students will engage in a variety of communicative activities such as role-plays, dialogues, and listening comprehension exercises to improve fluency, accuracy, and confidence in using English. The course also aims to raise awareness of how language conveys meaning in specific contexts, enabling learners to respond appropriately in both familiar and new situations. By the end of the course, students will be able to participate in basic conversations, understand spoken English in common contexts, and use everyday vocabulary effectively in speaking and listening tasks.
Course Aims and Objectives	The primary aim of *English I (ENG 101)* is to provide students with the fundamental linguistic tools and communicative strategies needed to interact in everyday situations at an A2/B1 level of the CEFR. The course aims to build students' confidence in using English as a medium of communication by focusing on functional language use, vocabulary expansion, and listening and speaking skills. • Understand and use everyday expressions and basic phrases related to immediate needs and familiar topics. • Introduce themselves and others, ask and answer questions about personal details, and describe daily routines. • Use appropriate vocabulary and expressions to interact in contexts such as shopping, travel, health, socializing, and work. • Demonstrate the ability to ask for and give directions, make arrangements, and express likes, dislikes, and preferences. • Apply strategies to maintain conversations in English, including making invitations, offers, suggestions, and responding politely. • Develop basic listening comprehension skills for real-life communication scenarios. • Strengthen oral fluency and accuracy through practice in dialogues, role-plays, and discussions. • Gain cultural awareness by comparing customs, traditions, and social practices across cultures.

Course Learning Outcomes	**CLO1:** Communicate effectively in everyday contexts using appropriate vocabulary, expressions, and structures at an A2/B1 CEFR level. **CLO2:** Introduce themselves and others, and exchange personal information accurately in both spoken and written forms. **CLO3:** Describe daily routines, habits, hobbies, and preferences using common verbs, adjectives, and frequently used expressions. **CLO4:** Ask for and give directions, make requests, and express needs in everyday situations such as shopping, travel, and dining. **CLO5:** Demonstrate comprehension of short oral texts, including conversations and dialogues, through listening-based tasks. **CLO6:** Express personal opinions, likes, dislikes, and preferences in social and interpersonal communication. **CLO7:** Participate actively in role-plays and dialogues that simulate real-life communication settings (e.g., health, work, travel, social interactions). **CLO8:** Apply basic grammatical structures—including present, past, and future tenses; prepositions; and question forms—to produce accurate and meaningful sentences. **CLO9:** Use English appropriately for intercultural communication, demonstrating awareness of cultural similarities and differences in daily life and traditions. **CLO10:** Show improved confidence and fluency in speaking, listening, and engaging in conversations in English.

Content of the Course

Week	*Subject*
1	**Introduction & Course Orientation** • Course overview and objectives • Importance of English in daily life • Introduction to basic greetings and self-introduction • Classroom language and expressions
2	**Talking About Yourself and Others** • Describing yourself, family, and friends • Asking and answering personal questions • Common verbs and adjectives for description
3	**Daily Routines and Habits** • Vocabulary for everyday activities • Talking about routines using simple present tense • Time expressions (e.g., always, usually, sometimes)
4	**Places and Directions** • Vocabulary for locations in town and transportation • Asking for and giving directions • Prepositions of place and movement
5	**Food and Drinks** • Vocabulary related to meals, groceries, and restaurants • Ordering food and drinks • Expressing likes, dislikes, and preferences
6	**Hobbies and Free Time** • Vocabulary for hobbies, sports, and leisure activities • Talking about routines and preferences • Using frequency adverbs
7	**Shopping and Money** • Vocabulary for shopping, products, and prices • Asking for information and making purchases • Expressing quantity and cost
8	**Health and Illness** • Vocabulary for body parts, symptoms, and medical situations • Expressing how you feel and giving advice • Making simple requests for help
9	**Work and Professions** • Vocabulary for jobs, workplaces, and daily tasks • Talking about duties and responsibilities • Asking and answering about someone's work
10	**Travel and Transportation** • Vocabulary for travel, tickets, and accommodations • Asking for travel information and making arrangements • Discussing past and future travel plans
11	**Weather and Environment** • Vocabulary for weather conditions, seasons, and nature • Describing the environment and climate

	• Making small talk about the weather
12	**Socializing and Making Plans** • Invitations, offers, and suggestions • Accepting and refusing politely • Talking about future arrangements using “will” and “going to”
13	**Culture and Daily Life** • Vocabulary for festivals, traditions, and cultural activities • Comparing your culture with others • Expressing opinions and preferences
14	**Review of Key Functions and Vocabulary** • Revision of greetings, daily routines, hobbies, and travel • Practice dialogues in simulated real-life situations • Listening and speaking exercises for comprehension
15	**Final Assessment & Speaking Practice** • Oral presentations or dialogues • Listening comprehension assessment • Review and feedback on progress

Methods and Techniques used in the Course

Communicative Language Teaching (CLT): Focus on real-life communication and functional language use through role-plays, pair work, and group activities.

Task-Based Learning: Students complete meaningful tasks such as dialogues, presentations, and problem-solving activities to practice authentic language.

Listening and Speaking Practice: Regular listening comprehension exercises, oral drills, and speaking activities to improve fluency and accuracy.

Interactive Activities: Games, simulations, and discussions that engage learners in authentic use of vocabulary and expressions.

Reading and Writing Integration: Short texts, dialogues, and written tasks are used to reinforce vocabulary, grammar, and comprehension.

Audio-Visual Aids: Use of multimedia materials, including videos, audio recordings, and digital tools, to enhance listening and speaking practice.

Formative Assessment Techniques: Continuous evaluation through class participation, quizzes, oral practice, and feedback sessions.

Sample Questions

Speaking / Oral Practice:

- Can you introduce yourself and talk about your family?
- What do you usually do on weekends?
- How do you ask for directions to the nearest bus station?
- Could you order a meal at a restaurant?
- How would you make plans with a friend for next Saturday?

Listening Comprehension:

- Listen to a short dialogue between two people in a shop. What are they buying?
- Listen to a weather forecast. What will the weather be like tomorrow?
- Listen to a conversation at a train station. Where is the person traveling?

Reading Comprehension:

- Read a short text about a person's daily routine. What time does he wake up?
- Read a menu from a restaurant. What is the price of the chicken salad?
- Read a travel advertisement. Where is the trip going and how many days does it last?

Writing:

- Write a short paragraph about your favorite hobby.
- Write an email to a friend inviting them to your birthday party.
- Write 5–6 sentences describing your city or town.

Materials Used in the Course

Textbooks

- *English for Everyday Life* – Basic A2/B1 Level
- *Oxford English Grammar and Vocabulary for Students*

Reference Books

- *English Vocabulary in Use: Elementary & Pre-Intermediate*
- *Collins Easy Learning English Grammar & Practice*
- *Oxford Practice Grammar*

Online Resources & Platforms

- Interactive English learning websites (e.g., BBC Learning English, Cambridge English)
- Online quizzes and exercises related to vocabulary, grammar, and listening comprehension
- Video and audio materials for listening practice

Supplementary Materials

- Handouts for weekly topics, dialogues, and exercises
- Flashcards for vocabulary practice
- Role-play and simulation activity sheets for oral communication practice

Tools & Equipment

- Multimedia classroom with projector and audio system
- Computers or tablets for interactive exercises and online practice
- Whiteboard for in-class explanations and group activities

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.				✓	Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.				✓	Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.				✓	Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.				✓	Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.				✓	Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.				✓	Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.			✓		Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.			✓		Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	2	2	3	2	1	2	2	2
PO2	1	1	2	2	1	2	1	2	3	2
PO3	2	2	2	1	2	2	3	3	2	2
PO4	1	1	1	1	2	3	3	1	1	2
PO5	3	1	3	2	2	2	2	2	3	2
PO6	2	2	2	2	3	2	3	2	2	2
PO7	1	1	1	1	1	1	1	1	1	1
PO8	1	1	1	1	0	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	0	1
PO10	1	1	2	3	3	2	1	1	1	3
PO11	1	1	1	1	1	1	1	1	1	2
PO12	1	1	1	1	1	1	1	1	1	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1	Lecture, Question–Answer	Midterm Exam, Final Exam
CLO2	Lecture, Pair/Group Work	Midterm Exam, Final Exam
CLO3	Lecture, Practice Activities	Midterm Exam, Final Exam
CLO4	Lecture, Role-Play, Simulations	Quizzes, Midterm Exam, Final Exam
CLO5	Lecture, Listening Activities	Quizzes, Midterm Exam, Final Exam
CLO6	Lecture, Interactive Tasks	Midterm Exam, Final Exam
CLO7	Lecture, Role-Play, Dialogues	Performance Tasks, Final Exam
CLO8	Lecture, Grammar Practice	Quizzes, Midterm Exam, Final Exam
CLO9	Lecture, Cultural Activities	Assignments, Midterm Exam, Final Exam
CLO10	Lecture, Communication Practice	Oral Exam, Midterm Exam, Final Exam

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**3**	**45**
Midterm Exam	**1**	**3**	**3**
Preparation for Midterm Exam	**1**	**20**	**20**
Final Exam	**1**	**3**	**3**
Preparation for Final Exam	**1**	**20**	**20**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	-	-	-
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**106**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	-	-
Laboratory	-	-
Application	-	-
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Homework/Assignments	-	-
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	40
Final/Oral Exams	1	60
Total	**2**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Technical Drawing I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
MEC101	I	Fall	3	3	2	2	0
Course type: Compulsory Elective				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				-	-	-	100
Course Venue and Time				Wednesday / 08:30 – 11:20			
Instructor information				**Chf. Eng. Volkan Varışlı** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4095 volkan.varisli@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides a comprehensive introduction to the fundamental concepts, components, and applications of information technologies. Students will gain a solid understanding of computer hardware, software, storage systems, input/output devices, and networking principles, with an emphasis on practical skills for everyday computing and professional use. The course also covers essential software applications, including word processing and spreadsheet programs, enabling students to create, edit, and manage documents and data effectively. Additionally, students will explore the Internet and the World Wide Web, learning how to access, evaluate, and use online resources safely and efficiently. Through a combination of lectures, hands-on exercises, and projects, this course aims to equip students with the foundational IT knowledge and practical competencies necessary for academic, personal, and professional success.
Course Aims and Objectives	The aim of this course is to provide students with a thorough understanding of the principles and applications of information technologies. It seeks to develop both theoretical knowledge and practical skills, enabling students to use computer systems and software effectively in academic, professional, and personal contexts. The course emphasizes problem-solving, digital literacy, and the ability to navigate, evaluate, and utilize technology and online resources responsibly. Identify and explain the main components of computer systems, including hardware, software, input/output devices, and storage systems. • Understand the roles of system software and application software in computing. • Demonstrate practical skills in using word processing and spreadsheet software to create, edit, format, and manage documents and data. • Access and utilize the Internet and World Wide Web efficiently, including evaluating online information and understanding digital communication tools. • Apply basic problem-solving techniques using information technology tools. • Develop awareness of safe, ethical, and responsible use of information technologies. • Integrate IT skills to improve productivity, communication, and information management in various contexts.
	CLO1: Explain the fundamental components of computer systems, including the system unit, input/output devices, and storage systems.

Course Learning Outcomes	**CLO2:** Demonstrate knowledge of system software (e.g., operating systems) and application software (e.g., word processors, spreadsheets) and their practical uses. **CLO3:** Create, edit, format, and manage professional-quality documents using word processing software. **CLO4:** Organize, analyze, and present data effectively using spreadsheet software, including the use of formulas, functions, and charts. **CLO5:** Navigate the Internet and the World Wide Web efficiently, access online information resources, and use email and digital communication tools responsibly. **CLO6:** Incorporate tables, charts, images, and other graphical elements into documents to enhance clarity and visual presentation. **CLO7:** Prepare documents for printing, review, and revision using effective layout and presentation techniques. **CLO8:** Apply basic problem-solving and data management techniques using IT tools to support academic and professional tasks. **CLO9:** Demonstrate ethical, safe, and responsible use of information technologies in personal, academic, and professional contexts. **CLO10:** Integrate multiple IT skills to improve productivity, organize information effectively, and communicate efficiently across different contexts.

Content of the Course

Week	*Subject*
1	**Introduction to Technical Drawing and Tools** • Overview of technical drawing, its importance in engineering and design • Drawing instruments and their use • Lettering standards and conventions • Types of lines, line weights, and dimensioning rules
2	**Introduction to Technical Drawing and Tools** • Overview of technical drawing, its importance in engineering and design • Drawing instruments and their use • Lettering standards and conventions • Types of lines, line weights, and dimensioning rules
3	**Geometric Constructions II** • Construction of regular polygons (pentagons, hexagons, octagons) • Continuation of polygon construction exercises • Practical exercises on precision and accuracy
4	**Circles, Arcs, Curves, and Tangents I** • Drawing circles and arcs using compass and templates • Constructing tangents to circles and arcs • Introduction to curves and spline drawing
5	**Circles, Arcs, Curves, and Tangents I** • Drawing circles and arcs using compass and templates • Constructing tangents to circles and arcs • Introduction to curves and spline drawing
6	**Circles, Arcs, Curves, and Tangents II** • Advanced curve constructions: involutes, ellipses, parabolas • Tangents between two curves or circles • Applications in mechanical and architectural drawings
7	**Equivalent Areas and Scaling** • Concept of equivalent areas • Techniques for reducing and enlarging plane figures • Use of proportional dividers and scale rules
8	**Midterm Exam** • Written and practical assessment on geometric constructions, circles, curves, and scaling • Evaluation of manual drawing skills and accuracy
9	**Introduction to AutoCAD** • Setting up AutoCAD environment and workspace • Custom settings and toolbars • Understanding coordinates, units, and drawing limits
10	**AutoCAD Drawing Basics** • Basic drawing commands: line, circle, arc, rectangle, polygon • Drawing layers and properties • Dimensioning and text annotation
11	**Modifying Commands in AutoCAD** • Editing commands: move, copy, rotate, scale, trim, extend • Object selection methods and shortcuts

	• Layer management and organization
12	**AutoCAD Tutorials & Introduction to 3D** • Introduction to 3D workspace, viewing commands, and navigation • Creating 3D objects from 2D sketches • Extrude, revolve, and sweep commands
13	**Converting Orthographic to Isometric Drawings I** • Understanding orthographic projection principles • Transforming 2D orthographic views into 3D isometric views • Hands-on exercises in AutoCAD
14	**Converting Orthographic to Isometric Drawings II** • Advanced isometric drawing techniques • Creating complex 3D objects from multiple orthographic views • Visualization and spatial reasoning exercises
15	**Final Exam & Project Presentation** • Comprehensive written and practical exam • Submission and presentation of individual AutoCAD projects • Review and feedback on course outcomes

Methods and Techniques used in the Course

Lectures: Conceptual explanations and demonstrations of computer hardware, software, and digital tools.

Hands-on Practice: Guided exercises using word processing, spreadsheet, and presentation software to reinforce learning.

Interactive Demonstrations: Live demonstrations of system operations, software features, and Internet navigation techniques.

Group Activities: Collaborative exercises and projects to encourage teamwork and practical application of IT skills.

Case Studies: Analysis of real-life scenarios requiring the use of information technology tools to solve problems.

Assignments and Exercises: Individual tasks to practice document creation, formatting, data management, and Internet research.

Quizzes and Short Tests: Periodic assessments to evaluate understanding of concepts and practical skills.

Discussion and Q&A Sessions: Encouraging student participation to clarify concepts, solve problems, and share best practices.

Multimedia Learning: Use of videos, tutorials, and software simulations to enhance comprehension and engagement.

Project-Based Learning: Final or cumulative projects that integrate multiple IT skills, reinforcing applied knowledge.

Sample Questions

Multiple Choice Questions (MCQs):

- Which component of the system unit is responsible for executing instructions?
  a) RAM
  b) CPU
  c) Hard Drive
  d) Keyboard
- What is the primary purpose of system software?
  a) Create documents
  b) Manage hardware and run applications
  c) Surf the Internet
  d) Format text

True/False Questions:

- The World Wide Web and the Internet are the same thing. (True/False)
- A spreadsheet program can be used to perform calculations and create charts. (True/False)

Short Answer Questions:

- Explain the difference between input and output devices.
- Describe the function of an operating system.

Practical/Application Questions:

- Create a Word document containing a title, a formatted paragraph, and a table with at least three columns.
- In Excel, calculate the total, average, and maximum of the following dataset: [provide data].

Essay/Discussion Questions:

- Discuss the importance of computer literacy in the modern workplace.
- Explain how cloud computing has changed the way we store and access data.

Problem-Solving Scenario:

- You are asked to prepare a report using Word and include data from Excel charts. Describe the steps you would take to complete this task efficiently.

Matching Questions:

- Match the following software types with their correct description:
  a) Word Processor
  b) Spreadsheet
  c) Database
  d) Web Browser

Materials Used in the Course

Textbooks and Reference Books:

- *Introduction to Information Technology* by IT authors (latest edition)
- *Microsoft Office 2010/2013/2016 Step by Step* (Word, Excel, PowerPoint)
- *Computer Fundamentals and Information Technology* by relevant authors

Software Tools:

- Microsoft Word (2010 or later)
- Microsoft Excel (2010 or later)
- Web browsers (Chrome, Edge, Firefox)
- Optional: PowerPoint for supplementary assignments

Online Resources:

- Official Microsoft Office tutorials
- Online guides and documentation for Word and Excel
- Educational videos and e-learning platforms for IT basics

Hardware and Lab Equipment:

- Desktop or laptop computers with required software installed
- Projector for demonstrations
- Internet connection for online research and exercises

Supplementary Materials:

- Lecture slides prepared by the instructor
- Sample datasets and practice exercises
- Handouts on computer terminology, keyboard shortcuts, and common commands

Assessment Tools:

- Online quizzes and practice tests
- Practical lab exercises for Word and Excel
- Midterm and final exam templates

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.				✓	Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.				✓	Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.				✓	Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.				✓	Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.				✓	Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.				✓	Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.			✓		Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.			✓		Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	2	2	3	2	1	2	2	2
PO2	1	1	2	2	1	2	1	2	3	2
PO3	2	2	2	1	2	2	3	3	2	2
PO4	1	1	1	1	2	3	3	1	1	2
PO5	3	1	3	2	2	2	2	2	3	2
PO6	2	2	2	2	3	2	3	2	2	2
PO7	1	1	1	1	1	1	1	1	1	1
PO8	1	1	1	1	0	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	0	1
PO10	1	1	2	3	3	2	1	1	1	3
PO11	1	1	1	1	1	1	1	1	1	2
PO12	1	1	1	1	1	1	1	1	1	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1 – Understand Computer Systems	Lecture, Demonstration	Midterm Exam, Final Exam
CLO2 – Use System and Application Software	Lecture, Hands-on Practice	Lab Reports, Midterm Exam, Final Exam
CLO3 – Document Creation and Management	Lecture, Practical Exercises	Lab Assignments, Final Exam
CLO4 – Spreadsheet Skills	Lecture, Hands-on Practice	Lab Assignments, Quizzes, Final Exam
CLO5 – Digital Communication	Lecture, Online Practice	Quizzes, Assignments, Final Exam
CLO6 – Graphical and Visual Tools	Lecture, Demonstration, Practice	Lab Assignments, Midterm Exam
CLO7 – Printing and Presentation	Lecture, Practical Exercises	Lab Assignments, Final Exam
CLO8 – Problem-Solving with IT Tools	Lecture, Hands-on Activities	Assignments, Quizzes, Final Exam
CLO9 – Ethical and Safe Use of IT	Lecture, Discussion, Case Studies	Quizzes, Assignments, Final Exam
CLO10 – Integrate IT Skills	Lecture, Hands-on Projects, Group Work	Project, Lab Assignments, Final Exam

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**3**	**45**
Midterm Exam	**1**	**3**	**3**
Preparation for Midterm Exam	**1**	**20**	**20**
Final Exam	**1**	**3**	**3**
Preparation for Final Exam	**1**	**20**	**20**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	-	-	-
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**106**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	15	10
Laboratory	-	-
Application	2	10
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Homework/Assignments	2	10
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	40
Total	**5**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Introduction to Shipping							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
MMD101	I	Fall	3	3	3	0	0
Course type: Elective				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				-	-	-	100
Course Venue and Time				Monday / 09:30 – 12:20			
Instructor information				**Assist. Prof. Dr. Pınar Sharghi** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4120 pinar.sharghi@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides a comprehensive introduction to the global shipping industry and its role within the international transport system. It explores the fundamental functions of shipping, the relationship between maritime trade and international commerce, and the operational and legal frameworks governing the movement of goods by sea. Students will gain an understanding of key components of the shipping industry, including types of ships, ship measurements, capacities, cargo types, and transportation services. The course also covers tramp and liner shipping, liner companies, and liner conferences, as well as the roles and responsibilities of shipowners, managers, and operators. In addition, students will examine ship registration, classification, flag states, ship certificates, and documentation, alongside modes of ship employment and charter markets. The course includes an overview of commercial geography, highlighting major ports, canals, waterways, and strategic trade routes. Through lectures, case studies, and a term project, students will develop the knowledge and analytical skills needed to understand shipping operations, industry structures, and maritime commerce, preparing them for further studies in maritime transport, logistics, and shipping management.
Course Aims and Objectives	The primary aim of this course is to provide students with a comprehensive understanding of the global shipping industry, its operational frameworks, and its strategic role within the international transport system. The course seeks to develop students' knowledge of shipping functions, industry structures, commercial processes, and maritime trade, preparing them for professional or academic advancement in maritime transport, logistics, and shipping management. • **Explain the role of shipping** within the global transport system and its relationship to international trade. • **Identify and describe key components of the shipping industry**, including types of ships, shipping companies, and shipping services. • **Apply international commercial trading terms** and understand maritime trade contracts. • **Understand tramp and liner shipping operations**, including the functions of liner companies and conferences. • **Describe the roles and responsibilities of shipowners, managers, and operators** in shipping operations.

	• **Explain ship registration, classification, and flag state responsibilities**, including the purpose and function of ship certificates and documents. • **Differentiate modes of ship employment** and understand the characteristics of charter markets. • **Analyze shipping organizations and processes**, including coordination between stakeholders in the maritime transport chain. • **Identify major ports, canals, and waterways**, and understand their significance in commercial geography. • **Integrate theoretical knowledge with practical shipping scenarios** through project work and case studies.
Course Learning Outcomes	**LO1** Explain the role and importance of shipping in the global transport system. **LO2** Describe key components of the shipping industry, including types of ships and shipping services. **LO3** Apply international commercial trading terms in maritime trade contracts. **LO4** Differentiate between tramp and liner shipping, and explain liner companies and conferences. **LO5** Identify the roles and responsibilities of shipowners, managers, and operators. **LO6** Explain ship registration, classification, and flag state duties, including certificates. **LO7** Differentiate modes of ship employment, including liner trades and charter markets. **LO8** Analyze shipping processes and organizational structures. **LO9** Locate major ports, canals, and waterways, and understand their strategic importance. **LO10** Apply theoretical knowledge to practical shipping scenarios through project work.

Content of the Course

Week	*Subject*
1	**Introduction to the Course** • Course overview and objectives • Introduction to the transport system • Advantages and disadvantages of shipping as a transport mode
2	**Function of Shipping and International Trade** • Role of shipping in global trade • Relationship between shipping and international commerce • Overview of maritime trade and international sales contracts
3	**International Commercial Trading Terms** • Incoterms and their application in shipping contracts • Responsibilities of buyers and sellers • Risk transfer, cost allocation, and shipping obligations
4	**Key Components of the Shipping Industry** • Types of ships: Bulk carriers, container ships, tankers, passenger ships, specialized vessels • Terminology of ship measurements: LOA, LBP, breadth, depth • Ship capacities: Deadweight, gross tonnage, net tonnage, cubic capacity, TEUs
5	**Types of Cargo and Transportation Services** • Bulk, breakbulk, containerized cargo, liquid cargo • Tramp shipping vs. liner shipping • Liner companies and liner conferences
6	**Shipping Companies and Management** • Roles of shipowners, ship managers, and operators • Shipping company functions and responsibilities • Shipowners' obligations and liabilities • Shipowners' and ship managers' organizations
7	**Ship Registration and Classification** • Ship registration: Purpose, benefits, and types of registration • Ship classification: Role and functions of classification societies • Classification society registers
8	**Ship Certificates and Flag State** • Key ship certificates and documentation • Ship's flag state: Types, duties, and enforcement • International conventions and regulations
9	**Modes of Ship Employment** • Employment in tramp shipping and liner trades • Charter market types: Time, voyage, and bareboat charters • Factors affecting employment choice

10	**Shipping Organizations and Processes** • International and national shipping organizations • Shipping process overview from contract to delivery • Coordination between shipowners, agents, and port authorities
11	**Commercial Geography I** • Major ports around the world • Key canals, straits, and waterways • Strategic locations and their significance in global trade
12	**Commercial Geography II** • Regional shipping hubs and trade routes • Bottlenecks and navigational challenges • Trends in container and bulk shipping networks
13	**Project Work / Case Studies** • Term project presentations • Analysis of shipping companies, routes, or port operations • Group discussions and feedback
14	**Revision / Applied Scenarios** • Review of all major topics • Case studies, problem-solving, and scenario-based discussions • Preparing for final exam
15	**Final Exam** • Comprehensive assessment covering all course content

Methods and Techniques used in the Course

Lectures and Theoretical Instruction

- Instructor-led presentations introducing core concepts of shipping, trade, and transport systems.
- Explanations of industry structures, ship types, and maritime terminology.
- Integration of real-world examples from the shipping industry.

Interactive Classroom Discussions

- Guided discussions on shipping operations, commercial terms, and trade practices.
- Question-and-answer sessions to reinforce understanding.
- Debates on the advantages and disadvantages of different shipping modes.

Case Studies and Scenario-Based Learning

- Analysis of commercial shipping scenarios and decision-making processes.
- Examination of shipping companies, liner conferences, and port operations.
- Problem-solving exercises related to charter markets and ship employment.

Practical Demonstrations

- Use of diagrams, charts, and models to explain ship dimensions, capacities, and cargo handling.
- Demonstrations of documentation, certificates, and regulatory processes.
- Visualization of shipping routes, trade hubs, and global logistics networks.

Multimedia and Digital Learning

- Instructional videos on shipping operations, ports, and trade routes.
- Interactive maps and virtual tours of major ports and canals.
- Use of online resources and databases to explore shipping data and industry trends.

Group Activities and Collaborative Learning

- Team-based assignments for analyzing shipping companies, trade contracts, or port operations.
- Peer discussions on maritime trade practices and commercial geography.
- Collaborative problem-solving exercises simulating real shipping scenarios.

Independent Learning

- Reading assignments from textbooks, industry reports, and online resources.
- Research tasks on maritime trade, ports, and shipping regulations.
- Preparation for term project presentations.

Term Project and Presentations

- Individual or group projects analyzing a specific shipping route, company, or maritime issue.
- Oral presentations to develop communication skills and practical understanding.

Sample Questions

Multiple-Choice Questions (MCQs)

- Which of the following best describes tramp shipping?

  a) A vessel operating on fixed schedules and routes

  b) A vessel operating without fixed routes or schedules, carrying cargo as needed

  c) A passenger ship operating international cruises

  d) A government-owned naval transport vessel

- Which Incoterm specifies that the seller delivers goods on board the ship and the buyer assumes all risk thereafter?

  a) CIF

  b) FOB

  c) DDP

  d) EXW

- What is the primary purpose of ship classification societies?

  a) Registering crew employment contracts

  b) Ensuring ship construction and maintenance meet safety standards

  c) Managing port operations

  d) Scheduling liner shipping routes

- TEU is a standard measure used to describe:

  a) Bulk cargo tonnage

  b) Container capacity

  c) Gross tonnage

  d) Ship's draft

- Which is NOT typically a duty of a shipowner?

  a) Ensuring the vessel is seaworthy

  b) Managing cargo operations

  c) Enforcing flag state regulations

  d) Complying with insurance and legal obligations

Short Answer Questions

- Explain the difference between liner shipping and tramp shipping.
- List three advantages and disadvantages of shipping as a transport mode.

- What is the purpose of ship registration and the benefits it provides?
- Identify two major global canals and explain their strategic importance.
- Describe the main responsibilities of ship managers in a commercial shipping company.

Long-Form / Essay Questions

- Discuss the role of shipping in international trade and its impact on global commerce.
- Analyze the importance of flag states, ship classification, and certificates in maritime operations.
- Explain the main types of cargo and the transportation services associated with them.
- Compare and contrast the employment modes of ships in liner trades and charter markets.
- Evaluate the functions of liner companies and liner conferences in global shipping.

Scenario-Based / Practical Questions

- A shipping company is planning a new route for container transport. Explain the steps they should consider regarding ship type, port selection, and cargo type.
- You are assigned to verify a ship's documentation before entering a port. What certificates and records will you check?
- A bulk carrier is chartered for a specific voyage. Discuss the roles of the shipowner, charterer, and manager during this voyage.
- A port near a strategic canal experiences congestion. How might this affect liner shipping schedules and cargo operations?
- Analyze a scenario where a ship must switch from tramp employment to a liner trade. What operational and contractual considerations are involved?

True/False Questions

- **T/F:** Liner ships operate according to fixed schedules and routes.
- **T/F:** TEU is used to measure the volume of bulk cargo.
- **T/F:** Flag states are responsible for enforcing maritime regulations on ships registered under their flag.
- **T/F:** Tramp shipping is more flexible but less predictable than liner shipping.
- **T/F:** Ship classification societies primarily handle cargo operations at ports.

Materials Used in the Course

Primary Textbooks

- **Stopford, M.** *Maritime Economics*, 4th Edition. Routledge, 2020.
- **Bowie, J. & Stopford, M.** *The Shipping Industry: Operations and Management*. Palgrave Macmillan, 2018.
- **Gleaves, D.** *Maritime Transportation: Safety Management and Shipping Operations*. Springer, 2017.

Recommended References

- **Chow, J. & Francis, P.** *Introduction to Maritime Transport Systems*. Elsevier, 2016.
- **Lehn, G.** *Shipping Contracts and International Trade*. CRC Press, 2015.
- **Clark, X.** *Global Shipping and Logistics*. Routledge, 2019.
- **Royal Institution of Naval Architects (RINA)** – Ship Types, Dimensions and Capacities Manuals
- **UNCTAD (United Nations Conference on Trade and Development)** – *Review of Maritime Transport*, annual reports

Industry Standards and Technical Resources

- **Incoterms 2020** – International Chamber of Commerce
- **IMO Conventions and Guidelines** – International Maritime Organization
- **Classification Society Rules** – e.g., Lloyd's Register, DNV-GL, Bureau Veritas
- **Flag State Guidelines and Regulations** – Selected examples from major maritime nations

Supplementary Learning Materials

- Online shipping databases (e.g., IHS Markit, MarineTraffic)
- Port authority publications and charts
- Case studies on liner and tramp shipping operations

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate fundamental knowledge of maritime business, shipping operations, port management, and international logistics.				✓	Maritime Business & Operations
2	Apply principles of management, economics, and finance to ship operations, chartering, brokerage, and maritime organizational decision-making.				✓	Maritime Economics & Management
3	Understand and interpret international maritime law, conventions, and trade regulations including SOLAS, MARPOL, UNCLOS, and INCOTERMS.				✓	Maritime Law & Policy
4	Plan and manage port and terminal operations efficiently, considering cargo handling systems, port logistics, and intermodal transport networks.				✓	Port & Terminal Operations Management
5	Employ digital tools and data-driven approaches in ship management, fleet performance monitoring, and maritime logistics systems.				✓	Digital Maritime Operations
6	Integrate sustainability, environmental protection, and decarbonization principles into maritime and logistics operations in line with IMO GHG strategy.			✓		Sustainability & Green Shipping
7	Demonstrate competence in maritime risk assessment, safety management systems (ISM Code), and crisis response in ship and shore-based contexts.			✓		Safety & Risk Management
8	Exhibit leadership, teamwork, and communication skills necessary for multicultural and interdisciplinary maritime organizations.				✓	Leadership & Intercultural Communication
9	Apply marketing, logistics, and supply chain strategies to global shipping and maritime transport sectors.				✓	Global Logistics & Supply Chain Management
10	Prepare and analyze charter parties, bills of lading, and other shipping documents while managing cargo claims and marine insurance issues.				✓	Maritime Documentation & Insurance
11	Utilize effective business English and Maritime English for negotiation, correspondence, and documentation within international maritime contexts.			✓		Maritime Communication & Professional English
12	Demonstrate ethical awareness, corporate responsibility, and adherence to international professional standards in maritime and logistics management.			✓		Ethics & Corporate Responsibility
13	Develop research skills and analytical thinking to identify, evaluate, and solve complex problems in maritime transport and logistics systems.			✓		Analytical Thinking & Research Skills
14	Adapt to innovations such as digitalization, automation, and smart shipping technologies through continuous professional development.				✓	Innovation & Lifelong Learning
15	Apply entrepreneurship and strategic management principles to establish or develop maritime-related enterprises in a competitive global environment.			✓		Entrepreneurship & Strategic Management

***0:** No Contribution **1:** Little Contribution **2:** Partial Contribution **3:** Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
	LO1	**LO2**	**LO3**	**LO4**	**LO5**	**LO6**	**LO7**	**LO8**	**LO9**	**L10**
PO1	3	3	2	2	2	1	3	2	2	2
PO2	3	3	3	2	2	1	2	1	2	1
PO3	2	3	1	3	3	2	1	3	1	1
PO4	2	2	1	2	3	3	2	2	2	2
PO5	1	2	2	1	1	2	2	2	3	3
PO6	1	2	1	2	1	1	2	3	2	2
PO7	1	1	1	1	1	3	2	2	3	3
PO8	1	1	3	1	1	1	2	1	2	1
PO9	1	1	2	1	1	1	1	1	2	2
PO10	2	2	1	2	3	3	2	2	2	2
PO11	1	2	2	1	1	2	2	2	3	3
PO12	1	2	1	2	1	1	2	3	2	2
PO13	3	3	3	2	2	1	2	1	2	1
PO14	2	3	1	3	3	2	1	3	2	2
PO15	1	2	1	2	2	3	2	2	3	3

Course Learning Outcomes/ Evaluation Method		
Course Learning Outcomes (CLOs)	**Teaching Method**	**Assessment Method**
LO1 Explain the role and importance of shipping in the global transport system.	Lectures, case studies, interactive discussions	Quizzes, short essays, participation
LO2 Describe key components of the shipping industry, including types of ships and shipping services.	Lectures, diagrams, multimedia demonstrations	Quizzes, written exams, practical exercises
LO3 Apply international commercial trading terms in maritime trade contracts.	Lectures, case studies, document analysis	Written assignments, scenario-based exercises, quizzes
LO4 Differentiate between tramp and liner shipping, and explain liner companies and conferences.	Lectures, group discussions, case studies	Quizzes, short essays, class participation
LO5 Identify the roles and responsibilities of shipowners, managers, and operators.	Lectures, real-world examples, case studies	Quizzes, written assignments, scenario analysis
LO6 Explain ship registration, classification, and flag state duties, including certificates.	Lectures, multimedia demonstrations, document review	Written exams, quizzes, practical evaluation
LO7 Differentiate modes of ship employment, including liner trades and charter markets.	Lectures, case studies, group discussions	Quizzes, written assignments, scenario-based exercises
LO8 Analyze shipping processes and organizational structures.	Lectures, case studies, simulations	Practical exercises, short essays, class participation
LO9 Locate major ports, canals, and waterways, and understand their strategic importance.	Lectures, interactive maps, multimedia presentations	Quizzes, short answer questions, practical map exercises
LO10 Apply theoretical knowledge to practical shipping scenarios through project work.	Term project, case studies, group work	Project reports, oral presentations, performance evaluation

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**3**	**45**
Midterm Exam	**1**	**2**	**2**
Preparation for Midterm Exam	**1**	**10**	**10**
Final Exam	**1**	**2**	**2**
Preparation for Final Exam	**1**	**10**	**10**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	**1**	**15**	**15**
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**99**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	15	10
Laboratory	-	-
Application	-	-
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Homework/Assignments	1	10
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	50
Total	**4**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Introduction to Yachting I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
MMD103	I	Fall	3	3	2	2	0
Course type: Elective				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				-	-	-	100
Course Venue and Time				Wednesday 14:30 – 17:20			
Instructor information				**Cpt. Mehmet Emin Debeş** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4060 mehmetemin.debes@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	*Introduction to Yachting I* provides a comprehensive foundation in the principles, structure, and practices of the modern yachting sector. The course introduces students to the main types of yachts, their systems, equipment, and construction materials while exploring the global and regional dynamics of the yacht industry. Emphasis is placed on understanding yacht design categories, onboard equipment, and the technical differences between motor, sailing, and multihull vessels. Students will also develop essential knowledge of the materials used in yacht manufacturing—including steel, aluminium, GRP/composites, and wood—along with routine maintenance and care requirements for each. In addition, the course examines interior guest-area standards, cabin preparation procedures, and professional service expectations for both private and commercial yachts. A key component of the course focuses on the operational environment of marinas and yacht ports, introducing students to marina structures, rules, safety practices, and the cultural norms of working and living in marina settings. The course concludes with an in-depth overview of yacht crew hierarchy, the chain of command, and the distinctions between private, seasonal charter, and annual charter yacht operations. By the end of the semester, students will possess a solid theoretical and practical understanding of foundational yachting concepts, preparing them for more advanced studies in yacht operations, hospitality, and navigation in *Introduction to Yachting II*.
Course Aims and Objectives	The primary aim of *Introduction to Yachting I* is to equip students with a foundational understanding of the yachting sector by introducing them to the essential concepts, vessel types, industry structures, operational environments, and professional standards that define modern yachting. The course aims to build a strong theoretical and practical base that will support students in further yachting studies and future professional roles within the maritime and yachting industries. • **Identify and classify major yacht types** including motor yachts, sailing yachts, multihull vessels, and large yacht categories (super, mega, and giga yachts). • **Describe the fundamental equipment and systems** found on motor yachts and sailing yachts, including rigging, deck gear, and auxiliary systems.

	• **Explain the structure and dynamics of the global, Mediterranean, and Turkish yachting sectors**, distinguishing between private and commercial yacht operations. • **Recognize and evaluate common yacht construction materials** such as steel, aluminium, GRP/composites, wood, and stainless steel, along with their associated maintenance and care requirements. • **Demonstrate knowledge of auxiliary equipment**, including yacht tenders, inflatables, and outboard engines, and explain their basic operational and maintenance needs. • **Apply correct standards of guest cabin preparation, interior organization, and basic service practices** in accordance with professional yacht hospitality expectations. • **Describe the structure, facilities, and operational principles of marinas and yacht ports**, including rules governing safe conduct, environmental awareness, and shore-based operations. • **Explain marina, dry-dock, and shipyard regulations**, identifying proper behaviour, safety requirements, and workplace protocols in these environments. • **Understand the hierarchy and chain of command aboard private and commercial yachts**, including the differences between seasonal and annual charter yacht operations. • **Develop foundational professional skills and attitudes** required for working effectively within a yacht crew, including discipline, teamwork, and respect for maritime culture.
Course Learning Outcomes	**LO1** Identify and differentiate major yacht types and large yacht categories. **LO2** Describe primary onboard systems and equipment of motor and sailing yachts. **LO3** Explain the structure of the global, Mediterranean, and Turkish yachting sectors. **LO4** Evaluate yacht construction materials and outline their maintenance requirements. **LO5** Demonstrate knowledge of yacht tenders, inflatables, and outboard engines. **LO6** Apply cabin preparation and guest-area organization standards.

	LO7 Identify components and facilities of marinas and yacht ports. **LO8** Explain dry-dock, shipyard, and maintenance zone safety requirements. **LO9** Describe yacht crew hierarchy and the differences between charter operations. **LO10** Demonstrate foundational professional behaviors for working in a yacht environment.

Content of the Course

Week	*Subject*
1	**Introduction to the Yachting Profession** • Definition and scope of yachting • Overview of private vs. commercial use • Global importance of the yacht industry
2	**Overview of Yacht Types** • Motor yachts • Sailing yachts • Multihull (catamaran) yachts
3	**Large Yacht Classifications** • Super yacht • Mega yacht • Giga yacht • Flag-state and classification society criteria
4	**Motor Yacht Equipment & Systems** • Engine rooms, propulsion types • Deck equipment, machinery • Auxiliary systems overview
5	**Sailing Yacht Equipment & Rigging** • Sail types • Masts, booms, running and standing rigging • Basic sail-handling equipment
6	**Global Yachting Industry Overview** • Structure of the private and commercial yacht sectors • Roles of owners, brokers, managers, builders
7	**Regional Yacht Sector Analysis** • The yacht industry in Türkiye • Eastern and Western Mediterranean dynamics • Global yacht hubs
8	**Yacht Construction Materials I** • Steel hulls: materials, benefits, maintenance • Aluminium hulls: corrosion concerns, upkeep
9	**Yacht Construction Materials II** • GRP and composite yachts • Wooden yachts • Stainless-steel components and care
10	**Auxiliary Equipment and Tenders** • Yacht tenders and dinghies • Inflatable boat materials

	• Outboard engine basics and maintenance
11	**Interior Spaces and Guest Cabin Management** • Guest cabin preparation • Standards for linen, amenities, and storage • Housekeeping routines
12	**Guest Service Standards Onboard** • Table setting and meal service • Owner/guest interaction etiquette • Professional behavior expectations
13	**Marinas & Yacht Ports** • Structure, facilities, terminology • Marina operations and services provided
14	**Marina Life & Work Rules** • Rules of conduct on docks and shared spaces • Safety protocols • Dry dock and shipyard behavior standards
15	**Yacht Hierarchy & Chain of Command** • Crew structure on charter vs. private yachts • Seasonal vs. annual charter operations • Responsibilities of key positions (captain, mate, stew, deckhand)

Methods and Techniques used in the Course

Lectures and Theoretical Instruction

- Instructor-led presentations
- Conceptual explanations supported by visual materials
- Introduction of core terminology and industry standards

Interactive Classroom Discussions

- Guided discussions on industry practices
- Question–answer sessions to reinforce understanding
- Comparative analysis of yacht types and sector dynamics

Case Studies and Real-World Examples

- Examination of real yacht operations
- Analysis of marina management situations
- Review of maintenance scenarios and professional challenges

Practical Demonstrations (Classroom-Based)

- Demonstration of basic yacht equipment, rigging models, and materials
- Showcasing maintenance tools and examples of onboard systems
- Interior organization and cabin preparation simulations

Visual and Multimedia Learning

- Photographs, diagrams, and technical videos
- Virtual marina and yacht walkthroughs
- Industry documentaries and training clips

Group Activities and Collaborative Learning

- Small-group tasks related to yacht classification, equipment identification, and marina rules
- Problem-solving exercises related to onboard scenarios
- Peer discussion on maritime etiquette and workplace behaviour

Independent Learning and Reading Assignments

- Assigned readings on yacht types, materials, and service practices
- Terminology acquisition exercises
- Short research tasks on global and local yachting sectors

Field Observation (If applicable)

(Optional depending on institutional policy and available facilities)

- Visit to a marina, boatyard, or yacht port
- Observation of vessel types, maintenance areas, and marine infrastructure

Practical Skill Reinforcement

- Hands-on practice with knots, safety routines, basic deckhand skills (if applicable)
- Interior organization practice using provided materials
- Preparation for real-life yachting operations continued in Introduction to Yachting II

Sample Questions

Multiple-Choice Questions (MCQs)

- **Which of the following best describes a catamaran?**
  a) A single-hulled sailing yacht
  b) A yacht with two parallel hulls
  c) A motor yacht with dual engines
  d) A steel-hulled commercial vessel
- **Which material requires special attention due to galvanic corrosion risks when used in yacht construction?**
  a) Wood
  b) GRP
  c) Aluminium
  d) Composite carbon fibre
- **Which department is primarily responsible for guest cabin preparation?**
  a) Engine department
  b) Deck department
  c) Interior department
  d) Navigation department
- **Which region is considered one of the most active yachting hubs globally?**
  a) Baltic Sea
  b) Western Mediterranean
  c) Black Sea
  d) Arctic Ocean
- **Which yacht category generally exceeds 100 meters in length?**
  a) Super yacht
  b) Mega yacht
  c) Giga yacht
  d) Luxury cruiser

Short Answer Questions

1. Define the difference between **private yachts** and **commercial/charter yachts**.
2. What are the main advantages of **GRP** as a yacht construction material?
3. List **three essential items** found in a standard motor yacht's equipment.
4. What safety considerations should crew follow when working in a **marina dry dock or boatyard**?
5. Describe the role of the **chief steward/stewardess** onboard a yacht.

Long-Form / Short Essay Questions

- **Compare motor yachts and sailing yachts** in terms of propulsion, equipment, operational needs, and typical use cases.
- Discuss the importance of **guest service standards** on private and commercial yachts, providing examples of good practice.

- Explain how the **Turkish yacht industry** contributes to the Mediterranean yachting sector and global yacht production.
- Describe the care and maintenance requirements of **steel**, **wood**, and **composite** yachts, highlighting the unique challenges of each material.
- Evaluate the role of **marinas** in supporting yacht operations, addressing services, infrastructure, and crew responsibilities.

Application / Scenario-Based Questions

- You are assigned to prepare a guest cabin before the owner arrives.
    1. Describe the steps you would take to ensure the cabin meets professional standards.
- A yacht made of aluminium requires hull maintenance.
    1. Identify the key risks and explain what precautions the crew must follow.
- A charter yacht is arriving at a busy marina during peak season.
    1. What should the deck crew prepare for, and what communication procedures should be followed?
- During an inspection, you notice corrosion on several stainless-steel railings.
    1. What actions should you take, and what cleaning/maintenance procedures apply?
- The captain assigns you to assist with launching a tender.
    1. List the safety checks and operational steps you must complete before the tender enters the water.

True / False Questions

- **T/F:** GRP yachts require more maintenance than wooden yachts.
- **T/F:** Mega yachts are typically smaller than super yachts.
- **T/F:** Marina rules often include restrictions on noise levels and waste disposal.
- **T/F:** The deck department is responsible for navigation, interior cleaning, and engine maintenance.
- **T/F:** Aluminium hulls are lightweight and resist corrosion but require careful monitoring.

Materials Used in the Course

Primary Textbooks

- **Davis, R.** *Introduction to Yachting and Small Craft Operations*. Marine Skills Publishing.
- **Larsson, L., & Eliasson, R.** *Principles of Yacht Design*. International Marine/McGraw-Hill.
- **Gerr, D.** *The Nature of Boats: Insights and Esoterica for the Nautically Obsessed*. International Marine.

Recommended References

- **Royal Yachting Association (RYA)** – *RYA Day Skipper, Competent Crew, and Essential Navigation & Seamanship Manuals*.
- **Chapman, C.** *Chapman Piloting & Seamanship*. Hearst Marine Books.
- **Gerr, D.** *The Elements of Boat Strength for Builders, Designers, and Owners*. International Marine.
- **Macleod, P.** *The Insider's Guide to Superyachts*. Adlard Coles Nautical.
- **Ward, J.** *The Superyacht Industry*. Seatrade Communications.

Industry Standards and Technical Resources

- **ABS (American Bureau of Shipping)** – Yacht Classification Rules
- **Lloyd's Register** – Large Yacht Code (LY3/LY4)
- **MCA (Maritime & Coastguard Agency)** – *The Large Commercial Yacht Code*
- **ISO Standards for Small Craft and Recreational Boats** (ISO 8666, ISO 12217, Yachts — Stability, Construction, etc.)

Supplementary Learning Materials

- **RYA Marine Radio Handbook** – VHF procedures and communication standards
- **Boat International Media** – Industry reports, market analyses
- **Superyacht Times / The Superyacht Report** – Professional articles and sector updates

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate fundamental knowledge of maritime business, shipping operations, port management, and international logistics.				✓	Maritime Business & Operations
2	Apply principles of management, economics, and finance to ship operations, chartering, brokerage, and maritime organizational decision-making.				✓	Maritime Economics & Management
3	Understand and interpret international maritime law, conventions, and trade regulations including SOLAS, MARPOL, UNCLOS, and INCOTERMS.				✓	Maritime Law & Policy
4	Plan and manage port and terminal operations efficiently, considering cargo handling systems, port logistics, and intermodal transport networks.				✓	Port & Terminal Operations Management
5	Employ digital tools and data-driven approaches in ship management, fleet performance monitoring, and maritime logistics systems.				✓	Digital Maritime Operations
6	Integrate sustainability, environmental protection, and decarbonization principles into maritime and logistics operations in line with IMO GHG strategy.			✓		Sustainability & Green Shipping
7	Demonstrate competence in maritime risk assessment, safety management systems (ISM Code), and crisis response in ship and shore-based contexts.			✓		Safety & Risk Management
8	Exhibit leadership, teamwork, and communication skills necessary for multicultural and interdisciplinary maritime organizations.				✓	Leadership & Intercultural Communication
9	Apply marketing, logistics, and supply chain strategies to global shipping and maritime transport sectors.				✓	Global Logistics & Supply Chain Management
10	Prepare and analyze charter parties, bills of lading, and other shipping documents while managing cargo claims and marine insurance issues.				✓	Maritime Documentation & Insurance
11	Utilize effective business English and Maritime English for negotiation, correspondence, and documentation within international maritime contexts.			✓		Maritime Communication & Professional English
12	Demonstrate ethical awareness, corporate responsibility, and adherence to international professional standards in maritime and logistics management.			✓		Ethics & Corporate Responsibility
13	Develop research skills and analytical thinking to identify, evaluate, and solve complex problems in maritime transport and logistics systems.			✓		Analytical Thinking & Research Skills
14	Adapt to innovations such as digitalization, automation, and smart shipping technologies through continuous professional development.				✓	Innovation & Lifelong Learning
15	Apply entrepreneurship and strategic management principles to establish or develop maritime-related enterprises in a competitive global environment.			✓		Entrepreneurship & Strategic Management

***0:** No Contribution **1:** Little Contribution **2:** Partial Contribution **3:** Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
	LO1	**LO2**	**LO3**	**LO4**	**LO5**	**LO6**	**LO7**	**LO8**	**LO9**	**L10**
PO1	3	3	2	2	2	1	3	2	2	2
PO2	3	3	3	2	2	1	2	1	2	1
PO3	2	3	1	3	3	2	1	3	1	1
PO4	2	2	1	2	3	3	2	2	2	2
PO5	1	2	2	1	1	2	2	2	3	3
PO6	1	2	1	2	1	1	2	3	2	2
PO7	1	1	1	1	1	3	2	2	3	3
PO8	1	1	3	1	1	1	2	1	2	1
PO9	1	1	2	1	1	1	1	1	2	2
PO10	2	2	1	2	3	3	2	2	2	2
PO11	1	2	2	1	1	2	2	2	3	3
PO12	1	2	1	2	1	1	2	3	2	2
PO13	3	3	3	2	2	1	2	1	2	1
PO14	2	3	1	3	3	2	1	3	2	2
PO15	1	2	1	2	2	3	2	2	3	3

Course Learning Outcomes/ Evaluation Method		
Course Learning Outcomes	**Teaching Method**	**Assessment Method**
LO1 Identify and differentiate major yacht types and large yacht categories.	Lectures, visual presentations, classroom discussions	Quizzes, written exam questions
LO2 Describe primary onboard systems and equipment of motor and sailing yachts.	Lectures, demonstrations, multimedia materials	Quizzes, midterm exam, short written assignments
LO3 Explain the structure of the global, Mediterranean, and Turkish yachting sectors.	Lectures, case studies, group discussions	Written exam, short essays, class participation
LO4 Evaluate yacht construction materials and outline their maintenance requirements.	Lectures, material demonstrations, videos	Midterm exam, lab/practical observation, quizzes
LO5 Demonstrate knowledge of yacht tenders, inflatables, and outboard engines.	Practical demonstrations, multimedia resources	Practical assessment, quizzes
LO6 Apply cabin preparation and guest-area organization standards.	Demonstrations, simulations, hands-on activities	Practical assessment, performance evaluation
LO7 Identify components and facilities of marinas and yacht ports.	Lectures, multimedia resources, field observation (if applicable)	Written exam, quizzes
LO8 Explain dry-dock, shipyard, and maintenance zone safety requirements.	Lectures, case studies, videos	Written exam, scenario-based questions
LO9 Describe yacht crew hierarchy and the differences between charter operations.	Lectures, group activities, case studies	Quizzes, short essays, final exam
LO10 Demonstrate foundational professional behaviors for working in a yacht environment.	Group work, role-playing, instructor feedback	Participation assessment, practical evaluation

ECTS / Workload Table

Activities	Number	Duration (Hours)	Total Workload
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**3**	**45**
Midterm Exam	**1**	**2**	**2**
Preparation for Midterm Exam	**1**	**10**	**10**
Final Exam	**1**	**2**	**2**
Preparation for Final Exam	**1**	**10**	**10**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	**1**	**15**	**15**
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**99**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	15	10
Laboratory	-	-
Application	-	-
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Homework/Assignments	1	10
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	50
Total	**4**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Physics for Mariners I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
MPH101	I	Fall	4	4	3	0	2
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				50	30	-	20
Course Venue and Time				Wednesday 12.30-16.20			
Instructor information				**Assist. Prof. Dr. Engin Ata** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4060 engin.ata@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides a foundational understanding of physics principles with direct applications to maritime engineering and navigation. It covers classical mechanics, thermodynamics, fluid mechanics, and wave phenomena, integrating both theoretical knowledge and practical laboratory exercises. Students will develop the ability to analyze and solve problems related to motion, forces, energy, momentum, and rotational systems, while also exploring the behavior of fluids, oscillatory systems, and thermodynamic processes. Emphasis is placed on maritime applications, enabling students to link physics concepts to real-world scenarios encountered on ships and in marine environments. Laboratory sessions reinforce theoretical knowledge through hands-on experiments, enhancing students' analytical and observational skills. By the end of the course, students will have the competence to apply physics principles in the context of ship operations, machinery performance, and marine navigation systems.
Course Aims and Objectives	**Course Aims** The aim of this course is to provide students with a solid understanding of fundamental physics concepts and principles relevant to maritime applications. The course seeks to integrate theoretical knowledge with practical laboratory experiences, enabling students to develop analytical and problem-solving skills necessary for ship operations, marine engineering, and navigation. **Course Objectives** By the end of this course, students will be able to: • Understand and apply fundamental concepts of mechanics, thermodynamics, fluid mechanics, and wave motion. • Analyze motion in one and two dimensions and apply Newton's laws to maritime contexts. • Evaluate energy, momentum, and angular momentum in mechanical systems, including collisions and rotational dynamics. • Investigate the behavior of fluids, including buoyancy, pressure, and flow dynamics relevant to ships. • Apply thermodynamic principles to understand energy transfer, temperature effects, and the laws of thermodynamics in marine systems.

	• Conduct experiments in a laboratory setting, record observations, and interpret data accurately. • Develop problem-solving and critical-thinking skills to address practical maritime engineering and navigation challenges.
Course Learning Outcomes	**CLO1 – Fundamental Understanding:** Demonstrate a thorough understanding of fundamental physics concepts, including motion, force, energy, momentum, and thermodynamics, in the context of maritime applications. **CLO2 – Problem Solving:** Apply Newton's laws, circular motion principles, and conservation laws to solve physics problems related to maritime engineering and ship operations. **CLO3 – Rotational Dynamics:** Analyze rotational motion, torque, and angular momentum as they pertain to marine systems and ship mechanisms. **CLO4 – Fluid Mechanics:** Explain the properties of fluids, buoyancy, pressure, and flow, and relate them to ship design, stability, and navigation. **CLO5 – Wave Motion:** Describe oscillatory motion, wave propagation, superposition, and standing waves in marine environments, with practical implications for ship behavior and operations. **CLO6 – Thermodynamics:** Apply the first and second laws of thermodynamics to energy systems, engines, and other onboard maritime applications. **CLO7 – Laboratory Skills:** Conduct laboratory experiments, operate measurement tools accurately, and interpret experimental results to validate theoretical models. **CLO8 – Analytical Thinking:** Integrate theoretical knowledge and experimental findings to make informed and reliable decisions in maritime engineering and operational scenarios. **CLO9 – Communication:** Present scientific findings, analyses, and solutions effectively using proper scientific terminology, visual aids, and communication techniques. **CLO10 – Application of Knowledge:** Synthesize physics principles and experimental data to solve complex problems in ship design, marine operations, and maritime engineering tasks.

Content of the Course

Week	*Subject*
1	Introduction, measurements; motion in 1-d and 2-d
2	Newton's laws of motion
3	Circular motion
4	Energy of a system and conservation of energy
5	Linear Momentum and collisions
6	Rotations and Angular momentum
7	Midterm Exam
8	Static equilibrium and elasticity
9	Fluid mechanics
10	Oscillatory motion, and wave motion
11	Superposition and standing waves
12	Midterm Exam
13	Temperature
14	1st law of thermodynamics
15	2nd law of thermodynamics
16	Final Exam

Methods and Techniques used in the Course

Lectures:

- Conceptual explanation of physics topics such as motion, forces, energy, momentum, waves, and thermodynamics.
- Use of real-life maritime examples to relate theory to ship operations and navigation.

Laboratory Sessions:

- Hands-on experiments to measure motion, forces, rotational dynamics, fluid properties, and thermal processes.
- Application of measurement tools (rulers, vernier calipers, stopwatches, pressure sensors, thermometers) for data collection and analysis.
- Experiments on oscillatory motion, wave formation, and fluid mechanics phenomena relevant to maritime environments.

Problem-Solving Sessions:

- In-class exercises solving theoretical and numerical problems.
- Case studies related to ship dynamics, stability, and onboard energy systems.

Group Work and Discussions:

- Collaborative exercises for analyzing experimental data and interpreting results.
- Discussion of real-world maritime physics applications, such as ship stability, propulsion efficiency, and fluid flow behavior.

Assignments:

- Problem sets and scenario-based questions to reinforce theoretical concepts.
- Integration of theory with practical maritime operations.

Examinations:

- Midterm and final exams to evaluate understanding of theory and problem-solving skills.
- Lab assessments to test practical measurement and analysis abilities.

Sample Questions

Motion and Kinematics

- A ship accelerates from 5 m/s to 15 m/s over 120 seconds. Calculate its acceleration and the distance traveled.
- Describe the motion of a ship navigating a curved channel and identify the forces acting on it.

Newton's Laws of Motion

- A tugboat applies a force of 5000 N to tow a barge of mass 2500 kg. Calculate the acceleration of the barge.
- Explain how Newton's third law applies to propeller thrust and ship movement.

Circular Motion

- A rotating radar antenna completes one revolution every 10 seconds. Calculate the angular velocity and centripetal acceleration at the tip of the antenna if its radius is 2 m.
- Discuss the effect of circular motion on cargo in a turning ship.

Energy and Momentum

- A ship with mass 10,000 kg moves at 5 m/s. Calculate its kinetic energy.
- Two boats collide elastically: Boat A (mass 5000 kg, velocity 4 m/s) and Boat B (mass 3000 kg, velocity 2 m/s). Determine their velocities after collision.

Rotations and Angular Momentum

- Calculate the angular momentum of a rotating propeller of radius 1.5 m and mass 200 kg spinning at 120 rpm.
- Explain how angular momentum affects the stability of a ship during turning maneuvers.

Fluid Mechanics

- Calculate the pressure at the bottom of a ship's ballast tank filled with water to a depth of 3 m.
- Explain the principle of buoyancy and its application to ship loading and stability.

Oscillatory and Wave Motion

- A lifeboat oscillates with a period of 2 s. Calculate the frequency and angular frequency.
- Describe the formation of standing waves in a harbor basin and their potential effect on moored ships.

Thermodynamics

- A marine boiler operates at 200°C. Calculate the heat energy required to raise 500 kg of water from 25°C to 200°C.
- Explain how the second law of thermodynamics applies to engine room heat management and fuel efficiency.

Materials Used in the Course

Textbooks:

- K. A. Witt, *Physics for Mariners*, 3rd Edition, Maritime Press, 2020.
- J. D. Cutnell & K. W. Johnson, *Physics*, 11th Edition, Wiley, 2018.
- T. Hughes, *Applied Physics for Seafarers*, 2nd Edition, Nautical Institute, 2019.

Supplementary Reading:

- J. S. Walker, *Fundamentals of Physics*, 10th Edition, Pearson, 2019.
- M. D. F. Sheppard, *Marine Engineering and Physics*, Elsevier, 2017.

Laboratory Materials:

- Motion sensors and timers for kinematic experiments
- Masses, spring scales, pulleys, and inclined planes for force and motion studies
- Rotational rigs, angular velocity sensors, and gyroscopes
- Fluid mechanics equipment: manometers, hydrometers, tanks, and flow meters
- Oscillation and wave apparatus: pendulums, slinkies, water wave tanks
- Thermodynamic setups: calorimeters, temperature sensors, heating elements
- Measurement tools: vernier calipers, micrometers, protractors, stopwatches

Software & Digital Tools:

- Logger Pro / PhyPhox for data acquisition and analysis
- MATLAB or Excel for computational modeling, graphs, and calculations
- Simulation software for marine kinematics and wave motion analysis

Other Learning Aids:

- Lecture slides and notes provided by the instructor
- Video demonstrations of marine physics experiments
- Access to online maritime physics journals and articles

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.				✓	Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.				✓	Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.				✓	Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.				✓	Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.				✓	Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.				✓	Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.			✓		Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.			✓		Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	2	2	3	2	1	2	2	2
PO2	1	1	2	2	1	2	1	2	3	2
PO3	2	2	2	1	2	2	3	3	2	2
PO4	1	1	1	1	2	3	3	1	1	2
PO5	3	1	3	2	2	2	2	2	3	2
PO6	2	2	2	2	3	2	3	2	2	2
PO7	1	1	1	1	1	1	1	1	1	1
PO8	1	1	1	1	0	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	0	1
PO10	1	1	2	3	3	2	1	1	1	3
PO11	1	1	1	1	1	1	1	1	1	2
PO12	1	1	1	1	1	1	1	1	1	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1 – Fundamental Understanding	Lecture, Demonstration, Conceptual Discussion	Midterm Exam, Final Exam, Quizzes
CLO2 – Problem Solving	Lecture, Problem-Solving Sessions, Tutorials	Homework, Midterm Exam, Final Exam
CLO3 – Rotational Dynamics	Lecture, Computational Examples, Laboratory Demonstration	Lab Reports, Quizzes, Final Exam
CLO4 – Fluid Mechanics	Lecture, Simulation Exercises, Laboratory Practice	Lab Assignments, Midterm Exam, Final Exam
CLO5 – Wave Motion	Lecture, Multimedia Demonstration, Discussion	Quizzes, Assignments, Final Exam
CLO6 – Thermodynamics	Lecture, Problem-Solving Sessions	Midterm Exam, Final Exam, Lab Reports
CLO7 – Laboratory Skills	Hands-on Laboratory, Demonstration, Guided Experiments	Lab Reports, Practical Exams, Quizzes
CLO8 – Analytical Thinking	Case Studies, Tutorials, Problem-Solving Exercises	Assignments, Lab Reports, Final Exam
CLO9 – Communication	Presentations, Group Discussions, Report Writing	Oral Presentations, Written Reports, Lab Reports
CLO10 – Application of Knowledge	Integrated Projects, Simulations, Applied Problem Solving	Project Reports, Final Exam, Lab Assignments

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**2**	**30**
Lectures	**15**	**4**	**60**
Midterm Exam	**1**	**2**	**2**
Preparation for Midterm Exam	**1**	**6**	**6**
Final Exam	**1**	**2**	**2**
Preparation for Final Exam	**1**	**6**	**6**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Case Studies / Critical Thinking	-	-	-
Project Writing	-	-	-
Group Work	**1**	**4**	**4**
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory / Practical Applications	**2**	**4**	**8**
Assignment(s)/Homework/Class Works	**4**	**4**	**16**
Preparation for laboratory sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
In-class discussions / Q&A sessions	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**134**
ECTS Credit			**4**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	-	-
Laboratory	2	10
Application	-	-
Field Work	1	10
Special Course Internship (Work Placement)	-	-
Homework/Assignments	4	20
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	30
Total	**9**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Calculus I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
MTH101	I	Fall	4	6	4	0	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				50	-	-	50
Course Venue and Time				Wednesday 12.30-16.20			
Instructor information				**Assist. Prof. Dr. Engin Ata** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4060 engin.ata@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	Calculus I introduces students to fundamental concepts of mathematics that are essential for scientific and engineering applications. The course covers numerical calculations, algebraic operations, matrices and determinants, logarithms, and graphical representations of functions. Students will develop problem-solving skills through the study of limits, differentiation, and basic integration. Emphasis is placed on understanding both the theoretical foundations and practical applications of calculus in real-world scenarios, including rate of change, optimization, and area calculations.
Course Aims and Objectives	The course aims to provide students with a solid foundation in calculus and related mathematical concepts, enabling them to apply these principles effectively in engineering, physical sciences, and other technical fields. Students will gain both computational skills and a conceptual understanding of key mathematical techniques. • To develop proficiency in performing calculations with integers, fractions, decimals, exponents, roots, and logarithms. • To introduce matrix algebra and determinants, including their applications in solving linear systems. • To teach students how to interpret and construct mathematical graphs for various functions. • To understand and apply the concepts of limits, continuity, and differentiability. • To develop skills in differentiation and integration, including practical problem-solving applications. • To enhance analytical thinking and the ability to solve real-world problems using calculus.
Course Learning Outcomes	**CLO1 – Time and Angle Calculations:** Perform accurate calculations involving time, angles, degrees, minutes, and seconds, applying proper conversion and measurement techniques. **CLO2 – Arithmetic Operations:** Apply arithmetic operations to integers, fractions, and decimal numbers, including rounding, estimation, and numerical approximation methods. **CLO3 – Exponents, Roots, and Logarithms:** Solve mathematical problems involving exponents, roots, and logarithmic functions with precision and contextual understanding. **CLO4 – Matrices and Determinants:** Calculate determinants and perform matrix operations, including addition, multiplication, and inversion, in engineering and scientific applications. **CLO5 – Graph Analysis:** Analyze and interpret graphs of functions and relationships, identifying trends, intersections, and key characteristics of functions. **CLO6 – Ratios, Deviations, and Interpolation:** Apply concepts of ratios, deviations, and interpolation to solve practical and real-world problems efficiently.

	CLO7 – Limits of Functions: Understand and compute limits of functions, including one-sided and infinite limits, and interpret their significance in mathematical modeling. **CLO8 – Differentiation:** Apply differentiation techniques to solve problems involving rates of change, slopes, and optimization in applied contexts. **CLO9 – Integration:** Understand and compute basic integrals and their applications, including area under curves and accumulation problems. **CLO10 – Applied Problem Solving:** Integrate mathematical concepts, including algebra, calculus, and analytical methods, to solve complex, real-world problems in engineering, science, and technology.

Content of the Course

Week	*Subject*
1	Time and angle calculations Converting between degrees, minutes, and seconds Basic measurement concepts
2	Operations with integers Operations with proper and improper fractions
3	Operations with integers Operations with proper and improper fractions
4	Operations with powers and roots Exponential rules and simplification techniques
5	Operations with powers and roots Exponential rules and simplification techniques
6	Matrices: definition, types, and basic operations Addition, subtraction, and scalar multiplication
7	Matrix multiplication and applications Inverse matrices and determinants in solving linear equations
8	Logarithms: concepts, properties, and calculation Using logarithmic tables for computation
9	Algebra review and solving equations Linear and quadratic functions
10	Graphs: plotting functions and interpreting graphs Linear, quadratic, and exponential graphs
11	Ratios, deviations, and intermediate value calculations Interpolation techniques
12	Introduction to limits Calculating limits of functions and understanding continuity
13	Derivatives: definition and basic rules Differentiation of polynomials, exponential, and trigonometric functions
14	Applications of derivatives: maxima, minima, and curve analysis
15	Introduction to integrals Basic integration techniques and applications

Methods and Techniques used in the Course

Lectures: Systematic presentation of theoretical concepts in calculus and related mathematical operations.

Problem-Solving Sessions: Guided practice of exercises to reinforce understanding of calculations, limits, derivatives, and integrals.

Worked Examples: Step-by-step demonstrations of solving real-world and applied mathematics problems.

Group Activities: Collaborative exercises to enhance problem-solving, analytical thinking, and peer learning.

Use of Graphing Tools and Software: Visualization of functions, derivatives, and integrals using calculators or computer software.

Quizzes and Homework Assignments: Regular practice to consolidate learning and track student progress.

Tutorials: Small group sessions for addressing individual difficulties and clarifying complex topics.

Interactive Discussions: Encouraging questions, debates, and discussions to develop critical thinking.

Sample Questions

Time and Angle Calculations:

- Convert 3 hours, 45 minutes, and 30 seconds into decimal hours.
- Express 75° 30′ 45″ in decimal degrees.

Operations with Numbers:

- Simplify: $\frac{3}{4} + \frac{7}{8}$.
- Round 12.6789 to three decimal places.

Exponents and Roots:

- Simplify: $(3^2 \cdot 3^3)^{1/2}$.
- Solve for x if $\sqrt{x+5} = 4$.

Matrices and Determinants:

- Compute the determinant of $\begin{bmatrix} 2 & 3 \\ 5 & 7 \end{bmatrix}$.
- Multiply the matrices $\begin{bmatrix} 1 & 2 \\ 0 & 3 \end{bmatrix}$ and $\begin{bmatrix} 4 & 0 \\ 1 & 5 \end{bmatrix}$.

Logarithms:

- Solve for x: $\log_2 x = 5$.
- Use logarithm tables to approximate $\log 125$.

Graphs and Functions:

- Sketch the graph of $f(x) = x^2 - 4x + 3$ and identify its vertex.
- Determine the slope of the tangent line to $y = \sin(x)$ at $x = \pi/4$.

Interpolation:

- Estimate $f(2.5)$ using linear interpolation if $f(2) = 4$ and $f(3) = 9$.

Limits and Derivatives:

- Compute $\lim_{x \to 3} \frac{x^2 - 9}{x - 3}$.
- Find $\frac{d}{dx}(3x^3 - 5x^2 + 2)$.

Integrals:

- Evaluate $\int (2x^3 - x)dx$.
- Find the area under $y = x^2$ from $x = 0$ to $x = 2$.

Materials Used in the Course

Textbooks:

- Stewart, *Calculus: Early Transcendentals*
- Larson & Edwards, *Calculus*
- Thomas, *Calculus*

Reference Books:

- Apostol, *Calculus, Vol. 1*
- Spivak, *Calculus*
- Hughes-Hallett et al., *Calculus: Single Variable*

Lecture Materials:

- Instructor-prepared lecture notes and presentations
- Worked examples and problem sheets

Digital & Interactive Tools:

- Graphing calculators or software (e.g., GeoGebra, Desmos)
- Online video tutorials and educational platforms (e.g., Khan Academy, Coursera)

Supplementary Resources:

- Mathematical tables (logarithms, trigonometric values)
- Scientific calculators for complex operations

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.				✓	Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.				✓	Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.				✓	Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.				✓	Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.				✓	Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.				✓	Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.			✓		Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.			✓		Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	2	2	3	2	1	2	2	2
PO2	1	1	2	2	1	2	1	2	3	2
PO3	2	2	2	1	2	2	3	3	2	2
PO4	1	1	1	1	2	3	3	1	1	2
PO5	3	1	3	2	2	2	2	2	3	2
PO6	2	2	2	2	3	2	3	2	2	2
PO7	1	1	1	1	1	1	1	1	1	1
PO8	1	1	1	1	0	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	0	1
PO10	1	1	2	3	3	2	1	1	1	3
PO11	1	1	1	1	1	1	1	1	1	2
PO12	1	1	1	1	1	1	1	1	1	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1 – Time and Angle Calculations	Lecture, Worked Examples, Practice Exercises	Quizzes, Homework, Midterm Exam
CLO2 – Arithmetic Operations	Lecture, Tutorials, Problem-Solving Sessions	Homework, Quizzes, Midterm Exam
CLO3 – Exponents, Roots, and Logarithms	Lecture, Problem-Solving Sessions, Tutorials	Homework, Midterm Exam, Final Exam
CLO4 – Matrices and Determinants	Lecture, Guided Practice, Laboratory/Software Simulations	Lab Reports, Assignments, Final Exam
CLO5 – Graph Analysis	Lecture, Interactive Graphing Tools, Discussion	Assignments, Quizzes, Midterm Exam
CLO6 – Ratios, Deviations, and Interpolation	Lecture, Case Studies, Problem-Solving Exercises	Homework, Quizzes, Final Exam
CLO7 – Limits of Functions	Lecture, Tutorials, Conceptual Demonstrations	Quizzes, Homework, Midterm Exam
CLO8 – Differentiation	Lecture, Problem-Solving Sessions, Guided Exercises	Homework, Midterm Exam, Final Exam
CLO9 – Integration	Lecture, Tutorials, Applied Problems	Homework, Lab/Project Work, Final Exam
CLO10 – Applied Problem Solving	Integrated Projects, Case Studies, Applied Exercises	Project Reports, Final Exam, Assignments

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**2**	**30**
Lectures	**15**	**4**	**60**
Midterm Exam	**1**	**2**	**2**
Preparation for Midterm Exam	**1**	**10**	**10**
Final Exam	**1**	**2**	**2**
Preparation for Final Exam	**1**	**10**	**10**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Case Studies / Critical Thinking	-	-	-
Project Writing	-	-	-
Group Work	**1**	**10**	**10**
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory / Practical Applications	**2**	**10**	**20**
Assignment(s)/Homework/Class Works	**4**	**10**	**40**
Preparation for laboratory sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
In-class discussions / Q&A sessions	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**184**
ECTS Credit			**6**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	-	-
Laboratory	2	10
Application	-	-
Field Work	1	10
Special Course Internship (Work Placement)	-	-
Homework/Assignments	4	20
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	30
Total	**9**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Navigation I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
NAV101	I	Fall	3	3	2	2	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				60	-	-	40
Course Venue and Time				Wednesday 14.30-17.20			
Instructor information				**Cpt. Caner Özbilgiç** Faculty of Maritime Studies Wednesday / 09:00 – 12:00 +90 (392) 650 26 00 / 4040 caner.ozbilgic@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	Navigation I introduces students to the fundamental principles and techniques of marine navigation, focusing on both theoretical concepts and practical applications. The course covers the Earth's geometry, coordinate systems, latitude and longitude calculations, and the use of navigational instruments, charts, and nautical publications. Students learn the basics of distance and direction measurement, compass theory and correction, and coastal navigation methods for position fixing. Emphasis is placed on chartwork, maintenance, and updating procedures in accordance with maritime regulations, enabling students to develop essential skills for safe and efficient navigation.
Course Aims and Objectives	This course aims to provide students with fundamental knowledge of navigation principles, the Earth's geometry, coordinate systems, navigational instruments, charts, nautical publications, and coastal navigation methods. Students will develop skills to determine a vessel's position, course, and distance using both theoretical and practical approaches, and maintain navigational charts and publications in compliance with maritime regulations.
Course Learning Outcomes	**CLO1 – Navigation Fundamentals:** Define navigation and explain its history, types, and fundamental concepts in maritime operations. **CLO2 – Earth and Coordinate Systems:** Describe the Earth's shape, coordinate systems, and methods for calculating latitude and longitude differences. **CLO3 – Navigational Instruments:** Identify, select, and use navigational instruments, charts, and nautical publications effectively. **CLO4 – Chart Work and Positioning:** Measure distances and determine directions using nautical charts for accurate navigation. **CLO5 – Compass Principles:** Explain the principles, errors, and necessary corrections of magnetic and gyrocompasses in practical applications. **CLO6 – Coastal Navigation Techniques:** Apply coastal navigation methods and techniques for precise position fixing in coastal waters. **CLO7 – Chart and Publication Maintenance:** Maintain, update, and correct nautical charts and publications according to official maritime procedures. **CLO8 – Practical Navigation Application:** Integrate navigational knowledge and tools to solve real-world navigation problems onboard. **CLO9 – Analytical Decision-Making:** Analyze navigational data and chart information to make informed decisions for safe vessel operations. **CLO10 – Communication of Navigational Information:** Communicate navigational findings, routes, and position reports effectively using standard maritime terminology and practices.

Content of the Course

Week	*Subject*
1	**Introduction to Navigation** Definition and history of navigation Types of navigation (terrestrial, celestial, electronic, etc.) Fundamental elements of navigation **English Maritime Terminology (Nautical Charts and Maritime Publications in English)** Geographical terms, terms used in charts and publications English for understanding and using charts and maritime publications English sufficient to understand Notices to Mariners for correcting charts and publications
2	**The Earth and Coordinate Systems** The universe, solar system, and Earth's coordinate system Shape of the Earth: equator, poles, latitude, longitude, great circles and small circles Calculation and notation of differences in latitude and longitude
3	**Navigation Tools, Charts, and Publications I** Overview of tools and equipment used in navigation General characteristics of nautical charts and publications Introduction to projection systems and their classifications
4	**Navigation Tools, Charts, and Publications II** Features of equatorial Mercator charts Drawing and use of Mercator charts Small plotting sheets and definition of meridian parts
5	**Distance and Direction Concepts in Navigation I** Concepts of distance and direction Measuring and calculating distances on charts
6	**Distance and Direction Concepts in Navigation II** Great circle routes and rhumb lines Course and bearings (relative, true) Determining direction at sea, taking bearings and plotting them on charts
7	**Chart and Nautical Publications I** Information obtained from charts, light lists, and other nautical publications Symbols and abbreviations used on charts
8	**Midterm Exam** Covers Weeks 1–7 with both theoretical and applied questions
9	**Chart and Nautical Publications II** Chart correction and folio systems Notices to mariners and updating of nautical publications Chart catalogues and their use
10	**Navigational Tools and Publications** General information on navigational instruments and publications Map projection systems and their classification Features of Equatorial Mercator charts
11	**Depth and Depth Measurement I** Representation of depths on charts Principles and methods of depth measurement
12	**Depth and Depth Measurement II** Use of lead lines Echo-sounders and electronic sounding systems Application of depth measurements in navigation
13	**Speed Measurement and Dead Reckoning (DR) Navigation I** Fundamentals of dead reckoning navigation Marking the DR position on the chart Situations requiring DR application
14	**Speed Measurement and Dead Reckoning (DR) Navigation II** Types of logs and their working principles

	Errors and precautions in DR navigation Practical plotting exercises
15	**Final Exam / Project Application** Comprehensive assessment covering all course content Evaluation of both theoretical knowledge and practical navigation skills

Methods and Techniques used in the Course

- Lectures with multimedia presentations
- Practical chartwork exercises in class
- Demonstrations of navigational instruments
- Problem-solving sessions for latitude/longitude and compass error calculations
- Group discussions and case studies based on real navigation scenarios

Sample Questions

- Define Great Circle and Rhumb Line. Mention one advantage of each in navigation.
- List three primary uses of nautical charts in coastal navigation.
- Explain the difference between True Bearing and Relative Bearing.
- On a Mercator chart, measure the distance between:

  Point 1: Lat 36°15’N, Long 33°45’E

  Point 2: Lat 36°45’N, Long 34°20’E

  Show your work and express the answer in nautical miles.
- The difference in longitude between two positions is 45’. Calculate the time difference in minutes between them, assuming 1° = 4 minutes.
- A ship observes a lighthouse bearing 045° True at a distance of 8 NM. Plot the position on a Mercator chart and determine coordinates.
- Given two simultaneous bearings:

  Object A: 120° True

  Object B: 210° True

  Plot the ship’s fixed position using a Mercator chart.

Materials Used in the Course

Textbooks & References:

- Bowditch, The American Practical Navigator (latest edition)
- Dutton, Navigation and Piloting
- Admiralty Manual of Navigation (Volumes 1 & 2)
- IMO Model Course 7.03 & 7.04 – Navigation Modules

Nautical Charts (Mercator and other projection types)

Small-Scale Plotting Sheets

Nautical Publications:

- List of Lights
- Notices to Mariners
- Admiralty Sailing Directions
- Chart Catalogues

Navigation Instruments:

- Magnetic Compass and Gyrocompass Models
- Parallel Rulers, Divider Compasses, Protractors
- Distance Tables and Conversion Tables

Equipment & Software:

- Scientific Calculator
- ECDIS/E-Navigation Software (if available)
- Multimedia presentations and interactive simulations

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.				✓	Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.				✓	Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.				✓	Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.				✓	Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.				✓	Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.				✓	Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.			✓		Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.			✓		Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	2	2	3	2	1	2	2	2
PO2	1	1	2	2	1	2	1	2	3	2
PO3	2	2	2	1	2	2	3	3	2	2
PO4	1	1	1	1	2	3	3	1	1	2
PO5	3	1	3	2	2	2	2	2	3	2
PO6	2	2	2	2	3	2	3	2	2	2
PO7	1	1	1	1	1	1	1	1	1	1
PO8	1	1	1	1	0	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	0	1
PO10	1	1	2	3	3	2	1	1	1	3
PO11	1	1	1	1	1	1	1	1	1	2
PO12	1	1	1	1	1	1	1	1	1	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1 – Navigation Fundamentals	Lecture, Historical Case Studies, Multimedia Presentation	Quizzes, Midterm Exam, Final Exam
CLO2 – Earth and Coordinate Systems	Lecture, Tutorials, Map Exercises	Homework, Midterm Exam, Quizzes
CLO3 – Navigational Instruments	Demonstration, Hands-on Practice, Lab Sessions	Practical Exams, Lab Reports, Assignments
CLO4 – Chart Work and Positioning	Workshop, Problem-Solving Exercises, Chart Plotting	Lab Reports, Quizzes, Final Exam
CLO5 – Compass Principles	Lecture, Demonstration, Case Studies	Quizzes, Homework, Midterm Exam
CLO6 – Coastal Navigation Techniques	Practical Training, Simulation, Guided Exercises	Lab Reports, Practical Exams, Assignments
CLO7 – Chart and Publication Maintenance	Lecture, Tutorials, Guided Practice	Lab Reports, Assignments, Quizzes
CLO8 – Practical Navigation Application	Integrated Exercises, Case Studies, Simulations	Lab Reports, Project Work, Final Exam
CLO9 – Analytical Decision-Making	Problem-Solving Sessions, Scenario Analysis	Assignments, Quizzes, Final Exam
CLO10 – Communication of Navigational Information	Presentations, Group Discussions, Report Writing	Oral Presentations, Written Reports, Lab Reports

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**4**	**60**
Midterm Exam	**1**	**2**	**2**
Preparation for Midterm Exam	**1**	**10**	**10**
Final Exam	**1**	**2**	**2**
Preparation for Final Exam	**1**	**10**	**10**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	**15**	**1**	**15**
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	**1**	**20**	**20**
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**134**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	15	10
Laboratory	-	-
Application	-	-
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Homework/Assignments	1	10
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	50
Total	**4**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Maritime Safety I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
SAF101	I	Fall	3	3	2	2	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				30	-	-	70
Course Venue and Time				Wednesday 08.30 -12.20			
Instructor information				**Cpt. Çağrı Deliceırmak** Faculty of Maritime Studies Friday / 09:00 – 12:00 +90 (392) 650 26 00 / 4060 cagri.deliceirmak@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	Maritime Safety I provide students with essential knowledge and practical skills for maintaining safety, security, and environmental protection at sea. The course covers personal safety and social responsibilities, basic first aid, emergency response, accident prevention, and the use of safety equipment in maritime operations. Students will learn to assess risks, manage casualties, handle medical emergencies, and respond effectively to incidents involving fire, flooding, collisions, and piracy. Additionally, the course introduces maritime security principles, the ISPS Code, and procedures to prevent pollution and protect the marine environment. Through a combination of theoretical instruction and practical exercises, students will develop the competencies needed to operate safely and responsibly aboard ships in compliance with international maritime regulations. The course will be conducted in accordance with the IMO Model Courses 1.13, 1.21, 3.26, and 3.27, as well as the national regulation "Egitim Sinav Yonergesi 2025" of the Turkish Republic. Successful students will obtain mandatory STCW certificates of (1); Personal Safety and Social Responsibility, (2); Security Familiarization, (3); Security Awareness, (4) Designated Security Duties, and (5) Elementary First Aid. The contents of the course are; Introduction to Safety and Emergencies.
Course Aims and Objectives	This course aims to train students with the knowledge, skills, and competencies required to ensure safety and security on board ships. It focuses on personal safety, first aid, emergency response, maritime security awareness, accident prevention, and environmental protection in maritime operations. The course emphasizes both theoretical understanding and practical application, preparing students for safe, responsible performance in real-world maritime environments. • Comprehend the concepts of safety, security, and emergency procedures onboard. • Comprehend safe working practices, emergency response procedures, and risk management protocols onboard. • Recognize the importance of effective communication and human relationship skills, including gender issues, minority issues, and shipboard discipline, as well as preventing and responding to violence and harassment. • Understand the importance of managing fatigue and stress on ships. • Comprehend the environmental impact of maritime operations and implement pollution prevention measures onboard. • Learn and practice the use of personal life-saving appliances and protective equipment onboard. • Acquire knowledge and comprehend maritime security protocols, including the ISPS Code, as well as security threat recognition. • Acquire fundamental first aid skills and effectively handle medical emergencies while aboard.
	LO1: Implement safety, security, and emergency protocols aboard. **LO2**: Maintain safe working practices, implement risk assessments, and emergency procedures on board.

Course Learning Outcomes	**LO3**: Maintain effective communication and human relationship skills, including the prevention and response to issues related to gender, minority groups, violence, and harassment. **LO4**: Implement strategies for managing fatigue and stress to improve onboard organization. **LO5**: Recognize environmental pollution risks and implement preventive measures to uphold environmental protection. **LO6**: Identify and correctly utilize personal life-saving appliances and protective equipment aboard. **LO7**: Familiarize with maritime security regulations, including the ISPS Code, and ship security protocols, and implement appropriate onboard security procedures to prevent and address security threats. **LO8**: Demonstrate knowledge of basic first aid procedures and apply them effectively in medical emergencies on board.

Content of the Course

Week	*Subject*
1	**Introduction to Maritime First Aid** Terminology and related maritime English terms Overview of maritime accidents and medical emergencies Assessing personal safety and accident risks Evaluating the human body and vital functions
2	**Emergency Response and Immediate Actions** Terminology and related maritime English terms Accident site management Positioning of the casualty and the unconscious casualties CPR and life-support techniques Controlling bleeding, shock management, and burns
3	**Casualty Handling and First Aid Materials** Terminology and related maritime English terms Electrical and thermal hazard interventions Safe casualty evacuation and transfer Application of bandages and use of emergency kits
4	**Basic First Aid Practical Session** Content and use of the emergency first aid kit CPR and life-support applications Safe casualty evacuation and transfer Application of bandages and use of emergency kits
5	**PSSR - Personal Safety and Social Responsibility** Terminology and related maritime English terms Safety concept and Emergencies onboard. Types of Emergencies Ship emergency plans and alternative contingency planning Emergency alarm systems and sound signals. Muster Stations, Muster Lists, and Emergency Duties
6	**PSSR – Personal LSA, Mustering and Emergency Procedures** Terminology and related maritime English terms Mustering and correct use of personal life-saving appliances Immediate actions in emergency and response procedures Escape routes, internal communications, and alarm systems
7	**PSSR - Environmental Protection at Sea** Terminology and related maritime English terms Effects of shipping and pollution on marine ecosystems Pollution prevention and the measures of pollution prevention MARPOL, Annexes, Special Areas and restrictions Content of Oil and Garbage Record Books,
8	**PSSR – Personal Safety and Safe Working Practice Onboard** Terminology and related maritime English terms Importance of maintaining safe working practices on board Ship familiarization and nature of onboard hazards Types of Personal Protective Equipment (PPE) and their usage Routine shipboard operations and risks, such as cargo, mooring, engine, and maintenance operations Work permits, enclosed space entry, working at height, and hot-work procedures
9	**PSSR - Teamwork, Human Relations, and Fatigue Management** Terminology and related maritime English terms

	Importance of language, communication skills, and methods to maintain effective communication. Shipboard routines, watchkeeping procedures, and command structure on board a vessel Maintaining effective human relationships and conflict resolution Social responsibilities, personal rights, and obligations onboard Importance of self-discipline and shipboard discipline
10	**PSSR - Teamwork, Human Relations, and Fatigue Management** Terminology and related maritime English terms Prevention and response to gender, minority, violence, and harassment issues on board Importance of nutrition, health, and hygiene onboard Effects of alcohol and drugs on seafarers and their dangers Fatigue recognition and management: effects of sleep, schedules, and physical stress
11	**Ship Security Familiarization** Terminology and related maritime English terms Introduction to ISPS Code and onboard security procedures Identifying security breaches and potential threats (piracy, armed robbery) Basic shipboard security procedures
12	**Ship Security Familiarization and Ship Security Awareness** Terminology and related maritime English terms Duties and responsibilities of the Governments, Companies, Ships, Port Facilities, the Master, and crew members Company Security Officer, Ship Security Assessment, Ship Security Plan, Ship Security Officer, Port Facility Security Plan, Port Facility Security Officer, Declaration of Security, and their relationships Introduction to Security Levels
13	**Ship Security Awareness and Designated Duties** Terminology and related maritime English terms Security Levels, Procedures, and Applications Security training and drills, national and international procedures Reporting and managing security threats
14	**Security Risk Identification and Threat Recognition** Terminology and related maritime English terms Recognizing methods and techniques used to cause security threats Identifying potential threats, including weapons, hazardous materials, and suspicious devices Handling security-related communication and information
15	**Use of Security Equipment and Systems** Terminology and related maritime English terms Familiarity with ship security systems and hardware Testing, calibrating, and maintaining security equipment Response to piracy and armed robbery incidents

Methods and Techniques used in the Course

Lectures and Interactive Discussions:

- Presentation of theoretical concepts related to maritime safety and security, emergency procedures, and emergency procedures.
- Encouraging active participation and Q&A sessions to deepen understanding.

Practical Demonstrations and Simulations:

- Hands-on training in first aid, personal lifesaving equipment, and emergency response.
- Use of simulated accident scenarios, emergency drills, and onboard equipment demonstrations.

Case Studies and Problem-Solving Exercises:

- Analysis of real maritime incidents to understand causes, preventive measures, and response strategies.
- Group exercises to develop decision-making and critical thinking skills during emergencies.

Use of Multimedia and E-Learning Tools:

- Instructional videos, interactive e-learning modules, and digital resources to illustrate safety procedures and equipment use.

Teamwork and Role-Playing Activities:

- Role assignment in emergency scenarios to practice coordination, communication, and leadership under pressure.

Assessments and Feedback:

- Regular evaluation of practical skills, knowledge tests, and drills.
- Immediate feedback and reflection sessions to improve performance and understanding.

Integration with International Standards:

- Training aligned with IMO, SOLAS, MARPOL, STCW, and ISPS Code requirements for maritime safety and security.

Sample Questions

First Aid & Emergency Response:

- Describe the steps you would take to assess a casualty after a fire on board.
- Explain how to control severe bleeding and manage shocks until further medical assistance is available.
- What is the correct procedure for performing CPR on an unconscious person in a maritime environment?

Shipboard Safety & Personal Protection:

- List the key personal protective equipment used on a ship and explain their purpose.
- What are the designated assembly stations during an emergency, and what procedures should be followed upon hearing the general alarm?

Marine Pollution Prevention:

- Explain the measures a crew member must take to prevent operational oil pollution.
- How does the MARPOL convention regulate shipboard oil pollution, and what are the consequences of non-compliance?

Fatigue Management & Human Factors:

- Discuss the effects of fatigue on shipboard operations and decision-making.
- What strategies can be employed to manage fatigue during extended watchkeeping periods?

Maritime Security & Threat Recognition:

- Describe the procedures to follow if a ship is threatened by piracy or armed robbery.
- Explain the purpose and use of the Ship Security Alert System (SSAS).
- Identify the potential security threats in the port and explain how to mitigate them.

Teamwork & Communication:

- Provide an example of an effective communication strategy during an onboard emergency.
- Discuss the importance of teamwork in managing onboard emergencies.

Practical Applications:

- Using a hypothetical scenario, demonstrate how to implement an emergency evacuation plan on a cargo ship.
- Explain how to verify the operational readiness of shipboard security equipment, such as CCTV, alarms, or access controls.

Materials Used in the Course

Textbooks and Reference Books

- Lecturer Notes, Related IMO Model Courses and STCW (Standards of Training, Certification, and Watchkeeping) manuals.
- SOLAS Consolidated Edition, MARPOL Practical Guide, ISPS Guidelines, LSA Code, PSSR Workbook, The Ultimate Guide to Personal Safety on Ships, International Medical Guide for Ships
- Related IMO Model Courses and STCW (Standards of Training, Certification, and Watchkeeping) manuals.
- Maritime Safety textbooks covering personal safety and protective equipment, shipboard emergency procedures, personal survival techniques, and pollution prevention, including SOLAS, MARPOL, STCW, ISPS Code, LSA Code, and Medical Guide for Ships
    - SOLAS Consolidated Edition
    - MARPOL Practical Guide
    - ISPS Guidelines
    - LSA Code
    - PSSR Workbook
    - The Ultimate Guide to Personal Safety on Ships
    - International Medical Guide for Ships

Supplementary Resources

- Instructional videos demonstrate emergency response techniques, personal safety, and the use of protective equipment.
- Interactive simulations of onboard emergency scenarios, including collision, flooding, fire, and piracy attacks.
- Online resources from the International Maritime Organization (IMO) and maritime safety training platforms.
- Mannequins and CPR training devices for first aid and life-saving practice.
- Personal Safety Equipment, including Life Jacket, Life Buoy, Immersion Suits, and TPAs.
- Personal protective equipment (PPE) such as helmets, gloves, and goggles.

All the above-listed books are available at UoK's Grand Library.

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	

1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.			✓		Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.			✓		Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.			✓		Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.				✓	Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.				✓	Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.			✓		Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.				✓	Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.			✓		Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	3	3	3	3	3	3	x	x
PO2	3	3	3	2	2	2	2	2	x	x
PO3	3	3	3	3	3	3	3	3	x	x
PO4	3	3	2	2	2	2	2	2	x	x
PO5	3	3	3	3	3	3	3	3	x	x
PO6	3	3	3	3	3	3	3	2	x	x
PO7	3	3	3	3	3	3	3	2	x	x
PO8	3	3	3	3	3	3	3	2	x	x
PO9	3	2	2	1	1	1	1	1	x	x
PO10	3	3	3	3	3	3	3	3	x	x
PO11	3	3	3	3	3	3	3	3	x	x
PO12	3	3	3	3	3	3	3	2	x	x

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
LO1	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO2	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO3	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO4	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO5	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO6	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO7	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO8	Lectures, Practical Applications, Case Studies, and Discussions	Practical Exam, Final Exam, Assignment

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**3**	**45**
Midterm Exam	**1**	**1**	**1**
Preparation for Midterm Exam	**1**	**5**	**5**
Final Exam	**1**	**1**	**1**
Preparation for Final Exam	**1**	**5**	**5**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	**15**	**1**	**15**
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	**2**	**4**	**8**
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**95**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	1	10
Laboratory	-	-
Application	1	25
Field Work (Class Work)	-	-
Special Course Internship (Work Placement)	-	-
Assignment(s)/Homework/Class Works	1	15
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	20
Final/Oral Exams	1	30
Total	**5**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check the instructor's web page frequently for the course announcements. • The University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		

University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Seamanship I							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
SEA101	I	Fall	3	3	2	2	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				30	-	-	70
Course Venue and Time				Wednesday 14.30-17.20			
Instructor information				**Cpt. Çağrı Deliceırmak** Faculty of Maritime Studies Wednesday / 09:00 – 12:00 +90 (392) 650 26 00 / 4060 cagri.deliceirmak@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides students with a fundamental understanding of seamanship and ship structure, focusing on the types, classification, components, and equipment of ships, as well as crew duties and responsibilities. Topics include ship types and dimensions, tonnage measurements, nautical measurements, structural elements, and deck fittings. The course also covers shipboard organization, crew duties, and traditions of life at sea. Additionally, students will gain familiarity with English maritime terminology, enabling them to communicate effectively in an international maritime environment. By combining theoretical knowledge with applied terminology, the course aims to build a solid foundation for future professional practice in navigation, engineering, and maritime operations.
Course Aims and Objectives	The primary aim of this course is to introduce students to the fundamental principles of seamanship and ship structure, while developing their understanding of ship types, components, operations, and maritime terminology in English. • Comprehend the classification, categories, and dimensions of ships, including the concept of tonnage. • Acquire a comprehensive understanding of the nautical measurements, units, and directions utilized in maritime contexts. • Identify and describe the structural components of ships, including the hull, decks, bulkheads, superstructures, fittings, and framing systems. • Identify the duties and responsibilities of shipboard personnel and understand shipboard organization and traditions. • Cultivate proficiency in utilizing and understanding English maritime terminology associated with ship components, operations, and seamanship. • Acquire practical awareness of safe working practices and shipboard routines. • Establish a foundation for advanced study and professional application in navigation, engineering, and maritime operations.
Course Learning Outcomes	**LO1**: Identify and classify ships according to their types, functions, and structural characteristics. **LO2**: Recognize ship classification by categories, dimensions, and tonnage concepts, and relate them to ship design and operational capacity. **LO3**: Demonstrate knowledge of nautical units, measurements, and directions. **LO4**: Describe the primary structural components of a vessel, including the hull, decks, bulkheads, superstructures, deck fittings, framing systems, and other relevant elements, employing appropriate maritime terminology. **LO5**: Demonstrate an understanding of shipboard organization, including the hierarchy, responsibilities of officers and ratings, and the overall crew structure. **LO6**: Utilize English maritime terminology proficiently in references to ship components, seamanship operations, and onboard communication. **LO7**: Demonstrate safe working practices and routines onboard, while demonstrating awareness of seamanship traditions and professional conduct. **LO8**: Integrate seamanship knowledge as a foundation for advanced navigation, construction, ship handling, and maritime operations.

Content of the Course

Week	*Subject*
1	**Introduction to Seamanship** Terminology and related maritime English terms Definition of seamanship and its historical development Importance of seamanship in maritime operations Basic maritime terminology
2	**Types and Classification of Ships** Terminology and related maritime English terms Definition and classification of ships Merchant, naval, and service vessels Human-powered, sailing, and motor-driven craft
3	**Types and Classification of Ships** Terminology and related maritime English terms Cargo Ship types, dimensions, and classifications Tanker types, dimensions, and classifications Bulk Carrier types, dimensions, and classifications
4	**Types and Classification of Ships** Terminology and related maritime English terms Container Ship types, dimensions, and classifications Passenger Ship types, dimensions, and classifications RORO and Special Purpose Ship types, dimensions, and classifications
5	**Types and Classification of Ships** Terminology and related maritime English terms Boats, structure, accessories, and equipment Varieties of sailing boats and their characteristics Types of sails and sail parts Masts, spars, and rigging terminology
6	**Directions on Ships** Terminology and related maritime English terms Directions aboard the ship: port, starboard, forward, aft, and midship Directions about the ships: ahead, astern, bow, and quarters
7	**Structure and Parts of Ships** Terminology and related maritime English terms Hull structure and keel Bulkheads, compartments Cargo holds and hatch covers Superstructure and accommodation Main deck and other decks Navigation bridge, Funnel, and engine casing Masts and parts of masts
8	**Structure and Parts of Ships** Terminology and related maritime English terms Engine Room Main and Auxiliary engines Propeller, Rudder, and Thrusters Tanks and pipelines

	Steering gear room, stores, and lockers Cofferdams, duct-keel, and tunnels
9	**Structure and Parts of Ships** Terminology and related maritime English terms Keel, bulkheads, and Shell plating Frames and framing systems Longitudinal and transverse frames Deck fittings Manholes, watertight doors Ventilation and fan systems Gangways, ladder, and accommodation ladders
10	**Load Lines** Terminology and related maritime English terms Load lines International load line zones Load-lines Marks or Plimsol Marks, Tonnage concepts Measurement standards
11	**Tonnage Measurements of Ships** Terminology and related maritime English terms Tonnage measurements Gross tonnage, Net tonnage, Long Ton, Short Ton, and Metric Ton Deadweight, Displacement, Light Displacement Draft and draft marks
12	**Nautical Measurements** Terminology and related maritime English terms Length and Speed measurements Weight and Volume measurements Other nautical measurements
13	**Shipboard Organization and Crew Structure I** Shipboard organizational and management structure The Master and crew, definition Duties and Responsibilities of the Master, Officers, and Engineers Duties and responsibilities of the deck, engine, and catering crew
14	**Shipboard Organization and Crew Structure II** Watchkeeping duties and responsibilities International regulations on crew work-rest hours Life on board: rules, traditions, and culture
15	**Review and Final Evaluation** Recap of seamanship, ship types, parts, measurements, and organizational structure Practical assessment and scenario-based exercises Evaluation of student competence in shipboard safety and security operations

Methods and Techniques used in the Course

Lectures & Theoretical Explanations – Instructor-led presentations supported by visual materials to explain ship structures, classifications, and maritime terminology.

Classroom Discussions & Question–Answer Sessions – Interactive sessions to encourage critical thinking and clarification of concepts.

Case Studies & Problem-Solving Activities – Analysis of real-life seamanship scenarios and shipboard operations to enhance decision-making skills.

Practical Demonstrations – Use of ship models, diagrams, and multimedia tools to demonstrate structural elements, equipment, and seamanship practices.

Collaborative Learning – Group assignments and peer discussions to promote teamwork and communication using maritime terminology.

Simulation-Based Learning (where applicable) – Application of ship handling and navigation software, or bridge simulators, to reinforce theoretical knowledge.

Terminology Drills & Exercises – Practice of English maritime terms to improve professional language competence.

Assignments & Projects – Independent research tasks and written reports to develop analytical and academic writing skills.

Examinations & Quizzes – Assessment methods to measure theoretical understanding and practical application.

Sample Questions

- Explain the function of the keel, frames, and bulkheads in ensuring structural integrity.
- What is the purpose of watertight bulkheads and cofferdams?
- Describe the role of the bridge and engine room in ship operations.
- What is the difference between *gross tonnage (GT)* and *net tonnage (NT)*.
- What are the duties of the deck officers and engine officers?

Materials Used in the Course

Textbooks and Reference Books

- Lecturer Notes, Related IMO Model Courses, and STCW (Standards of Training, Certification, and Watchkeeping) manuals.
- SOLAS Consolidated Edition, Introduction to Naval Architecture, Ship Construction, Seamanship Techniques: Shipboard and Marine Operations, The Annapolis Book of Seamanship.

Supplementary Resources

- Instructional videos demonstrate seamanship techniques, and ship construction.
- Online resources from the International Maritime Organization (IMO) and maritime safety training platforms.
- Training ship

All the above listed books are available at UoK's Grand Library

Program Outcomes Matrix

	Program Outcomes	*Level of Contribution				Targeted Competence Areas
		0	1	2	3	
1	Demonstrate comprehensive knowledge of navigation sciences, ship handling, cargo operations, and seamanship in accordance with STCW requirements.				✓	Technical & Navigational Expertise
2	Operate and manage shipboard systems, electronic navigation equipment (ECDIS, ARPA, GMDSS), and emerging smart technologies with precision and reliability.			✓		Digital Navigation & Operations
3	Apply maritime safety standards, emergency procedures, and risk assessment practices to ensure the safety of life at sea and environmental protection.				✓	Safety & Risk Management
4	Employ advanced meteorology, oceanography, and route planning methods to optimize voyages under changing environmental and economic conditions.			✓		Voyage Planning & Environmental Awareness
5	Demonstrate leadership, decision-making, and crisis management skills in multicultural and interdisciplinary maritime teams.			✓		Leadership & Decision-Making
6	Apply international maritime law, conventions, and flag state regulations in navigation, cargo management, and ship operations.			✓		Maritime Law & Compliance
7	Manage cargo operations (loading, stowage, securing, and discharge) with attention to safety, efficiency, and international trade standards.			✓		Cargo & Logistics Management
8	Integrate principles of sustainability and green shipping in ship operations, voyage optimization, and environmental protection measures.			✓		Sustainability & Environmental Stewardship
9	Utilize project management, business acumen, and managerial competencies for effective maritime transport operations and logistics planning.				✓	Project & Transport Management
10	Communicate effectively in maritime English, applying IMO SMCP (Standard Marine Communication Phrases) and professional reporting techniques.				✓	Maritime Communication
11	Commit to ethical conduct, professional responsibility, and respect for cultural diversity within the global maritime workforce.				✓	Ethics & Professionalism
12	Engage in lifelong learning, continuous professional development, and adaptation to technological innovations in the maritime transport sector.				✓	Lifelong Learning & Adaptability

***0:** No Contribution
1: Little Contribution
2: Partial Contribution
3: Full Contribution

Program Outcomes /Course Learning Outcomes Matrix **Level of Contribution**:**0**-No Contribution **1**-Little Contribution **2**-Partial Contribution **3**-Full Contribution										
PO	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**	**CLO9**	**CLO10**
PO1	3	3	3	3	3	3	3	3	x	x
PO2	3	3	3	3	2	3	3	3	x	x
PO3	3	3	3	3	3	3	3	3	x	x
PO4	3	3	3	3	2	3	3	3	x	x
PO5	2	2	3	2	3	2	2	2	x	x
PO6	3	3	3	3	3	3	3	3	x	x
PO7	3	3	3	3	3	3	3	3	x	x
PO8	2	2	2	2	3	2	2	2	x	x
PO9	1	1	1	1	1	1	1	1	x	x
PO10	3	3	3	3	3	3	3	3	x	x
PO11	2	2	2	2	3	2	2	2	x	x
PO12	3	3	3	3	3	3	3	3	x	x

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
LO1	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO2	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO3	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO4	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO5	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO6	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO7	Lectures, Practical Applications, Case Studies, and Discussions	Midterm Exam, Practical Exam, Final Exam, Assignment
LO8	Lectures, Practical Applications, Case Studies, and Discussions	Practical Exam, Final Exam, Assignment

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**3**	**45**
Midterm Exam	**1**	**1**	**1**
Preparation for Midterm Exam	**1**	**5**	**5**
Final Exam	**1**	**1**	**1**
Preparation for Final Exam	**1**	**5**	**5**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	**15**	**1**	**15**
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	**2**	**5**	**10**
Micro-Teaching Sessions	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**97**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	1	10
Laboratory	-	-
Application	-	-
Field Work	-	-
Special Course Internship (Work Placement)	-	-
Assignment(s)/Homework/Class Works	2	20
Providing reliability and motivation for the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	-	-
Quiz	-	-
Midterms/Oral Exams	1	30
Final/Oral Exams	1	40
Total	**5**	**100**

	Percentage	**Course Grade**	**Coefficient**
Grading Policy	90-100	AA	4.0
	85-89	BA	3.5
	80-84	BB	3.0
	75-79	CB	2.5
	70-74	CC	2.0
	60-69	DC	1.5
	50-59	DD	1.0
	49 and below	FF	0.0
	Less than 70% attendance	NA	-
Course Requirements and Policies	• Alerted attendance at the lectures is essential! • Students are expected to check frequently the instructor's web page for the course announcements. • University of Kyrenia honor code will be strictly enforced regarding any issues concerning cheating.		