University of Kyrenia

Faculty of Maritime Studies

Maritime Transportation Management Engineering

Syllabus

Course name: Maritime Law and Conventions II							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
LAW401	IV	Fall	4	4	4	0	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Fundamental Legal Knowledge (Core)**	**Legal Method & Reasoning**	**Legal Skills (Research & Writing)**	**General Education**
				60%	20%	10%	10%
Course Venue and Time				E - 6007 (15:30 – 18:20)			
Instructor information				**Lect. Halil Emre Gürler** Faculty of Law halilemre.gurler@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides an in-depth study of **Maritime Law and International Conventions**, with a particular focus on both **public and private maritime law**. It examines the legal status of ships, ship registration, seaworthiness, and the roles, rights, and responsibilities of masters and shipowners. The course further explores charter parties, freight contracts, and liabilities arising from maritime accidents such as collisions, salvage, and general average. In addition, students will analyze **national maritime legislation**, including cabotage, labor, port, customs, and health regulations, and their impact on maritime operations. A substantial part of the course is dedicated to the study of **major international maritime conventions** such as SOLAS, MARPOL, Load Lines, MLC 2006, and related IMO instruments, focusing on their legal requirements, implementation, and enforcement. Through a comparative and practical approach, this course aims to equip students with a comprehensive understanding of the **legal framework governing maritime activities**, preparing them to address contemporary challenges in both national and international contexts.
Course Aims and Objectives	The primary aim of this course is to provide students with a comprehensive understanding of the fundamental principles, rules, and practices of **maritime law** within both national and international frameworks. It seeks to develop students' ability to analyze legal concepts related to ships, masters, shipowners, cargo, charter parties, and maritime accidents, while also familiarizing them with the implementation of **international maritime conventions**. • Understand the scope, sources, and branches of maritime law, including both public and private maritime law. • Examine the legal status, registration, and seaworthiness requirements of ships, as well as the documents and records required onboard. • Analyze the authority, rights, and responsibilities of shipmasters and shipowners under national and international law. • Explore different types of charter parties, freight contracts, bills of lading, and their legal implications. • Evaluate liabilities and procedures concerning maritime accidents, including collisions, salvage, and general and particular average. • Gain knowledge of national maritime legislation, including cabotage, port regulations, customs, and health-related requirements. • Study the structure, content, and enforcement of major international maritime conventions such as SOLAS, MARPOL, Load Lines, UNCLOS, and MLC 2006.

	• Develop the ability to apply international maritime conventions and national regulations to practical case scenarios. • Strengthening their legal reasoning and problem-solving skills in matters related to maritime law and compliance.
Course Learning Outcomes	**CLO1: Define and explain** the scope, sources, and fundamental principles of maritime law, including its public and private branches. **CLO2: Identify and evaluate** the legal status, registration, and seaworthiness of ships, as well as the documents and certificates required onboard. **CLO3: Analyze** the authority, duties, and responsibilities of shipmasters and shipowners under both public and private maritime law. **CLO4: Interpret and apply** the legal framework of charter parties, bills of lading, and freight contracts, including their types, termination, and liabilities. **CLO5: Assess** the causes, consequences, and legal procedures of maritime accidents, including collisions, salvage, general average, and particular average. **CLO6: Discuss** the key elements of national maritime legislation, including cabotage, port regulations, customs law, health regulations, and seafarers' rights. **CLO7: Explain** the structure, objectives, and enforcement mechanisms of major international maritime conventions such as SOLAS, MARPOL, Load Lines, UNCLOS, STCW, and MLC 2006. **CLO8: Demonstrate** an understanding of the legal responsibilities for ensuring safety of life at sea and prevention of marine pollution. **CLO9: Apply** maritime law principles and international conventions to practical case studies and problem-solving exercises. **CLO10: Develop** legal reasoning, analytical thinking, and communication skills necessary for handling maritime legal issues in professional practice.

Content of the Course

Week	*Subject*
1	**Introduction to Maritime Law** Definition, Scope, and Branches
2	**Public Maritime Law** Definition, Scope, and Subdivisions
3	**Private Maritime Law** Definition, Scope, and Subdivisions
4	**The Ship in Maritime Law:** • Definition and Legal Status of Ships • Ship Registration and Flag State Rights
5	**Seaworthiness and Ship Requirements:** • Fitness for Voyage, Cargo, and Safety • Ship Surveys and Measurements • Safety Regulations for Life and Property at Sea
6	**Ship Documentation and Legal Instruments:** • Ship Certificates and Records (Logbooks, Tonnage Certificates, Ship's Papers) • Bills of Lading and Sea Protest
7	**The Master of the Ship:** • Legal Definition and Authority of the Master • Public and Private Law Responsibilities • Disciplinary Powers and Duties in Case of Offenses
8	**The Shipowner (Donatan):** • Definition, Rights, and Liabilities of the Shipowner
9	**Charter Parties and Freight Contracts:** • Types and Legal Nature of Charter Parties • Responsibilities of Parties • Laytime and Demurrage • Bills of Lading • Termination of Freight Contracts
10	**Maritime Accidents:** • Collisions at Sea • Sea Protest Procedures • General and Particular Average • Salvage and Assistance
11	**National Maritime Legislation:** • Cabotage Law • Maritime Labor Law • Laws on Seizure and Confiscation at Sea • Penal Codes and Criminal Procedures Related to Maritime Matters

12	**National Maritime Legislation:** • Cabotage Law • Maritime Labor Law • Laws on Seizure and Confiscation at Sea • Penal Codes and Criminal Procedures Related to Maritime Matters
13	**International Maritime Conventions:** • Ship Certification and Documentation under IMO Conventions • Load Line Convention (LL 1966/1988) • SOLAS (Safety of Life at Sea) Convention
14	**International Maritime Conventions:** • Ship Certification and Documentation under IMO Conventions • Load Line Convention (LL 1966/1988) • SOLAS (Safety of Life at Sea) Convention
15	**Contemporary Issues in Maritime Law and Conventions:** • National Implementation of International Conventions • Responsibilities of Ship, Crew, Cargo, and Passenger Safety under International Law • Methods and Practices for Preventing Marine Pollution

Methods and Techniques used in the Course

Lectures and Presentations: Instructor-led theoretical sessions supported with visual materials and case examples.

Classroom Discussions: Interactive discussions to encourage critical thinking and deeper understanding of maritime legal issues.

Case Study Analysis: Examination of real-life maritime incidents, accidents, and disputes to apply relevant conventions and legal principles.

Document and Convention Review: Practical exercises on reading, interpreting, and analyzing international conventions, ship documents, and legal texts.

Problem-Solving Exercises: Scenario-based activities requiring application of maritime law to operational and legal problems.

Group Work and Presentations: Collaborative tasks where students prepare and present analyses of selected maritime law topics.

Simulation and Role-Play: Mock legal or operational exercises (e.g., collision responsibility, salvage agreement, or port authority inspection) to practice real-world applications.

Use of Maritime English Terminology: Emphasis on practicing and applying specialized English vocabulary in written and oral form.

Independent Study and Research: Assignments and projects requiring students to explore maritime legal resources, conventions, and academic literature.

Sample Questions

Short Answer Questions

- Define the distinction between public maritime law and private maritime law, giving one example of each.
- What is meant by the “seaworthiness” of a ship, and why is it a critical legal requirement?
- Explain the legal authority and responsibilities of a shipmaster in the event of a maritime accident.
- What are the main differences between a charter party and a bill of lading?
- Briefly explain the concept of *general average* and provide one example.

Essay Questions

- Discuss the role and responsibilities of shipowners (donatans) under maritime law. How are their rights and liabilities defined in national and international frameworks?
- Analyze the importance of SOLAS and MARPOL conventions in ensuring maritime safety and environmental protection. Provide real-world examples of their implementation.
- Evaluate the legal implications of a collision at sea. How are liability and compensation determined under international conventions and national legislation?
- Examine the significance of the Maritime Labour Convention (MLC 2006) in protecting seafarers’ rights. How does it complement other maritime conventions?

Problem-Solving / Case Study Questions

- A vessel carrying bulk grain cargo suffers damage during a storm. The cargo is partially lost, and emergency repairs are conducted at sea. Discuss the legal implications of *general average* and how costs would be distributed among stakeholders.
- A ship registered under a flag state fails to comply with MARPOL Annex V requirements and is found discharging garbage into the sea. What are the possible legal consequences under both international conventions and national law?
- During a voyage, a shipmaster refuses to take a compulsory pilot in a restricted area, leading to grounding. Analyze the legal responsibilities of the shipmaster and the shipowner.

- A bill of lading is issued for containerized goods, but upon arrival, the cargo is found damaged. Explain the liabilities of the carrier and the legal remedies available to the cargo owner.

Multiple Choice Questions (MCQ)

- Which international convention primarily regulates the prevention of pollution from ships?

  a) SOLAS

  b) MARPOL

  c) STCW

  d) UNCLOS

- Which document is considered proof of the contract of carriage and the receipt of goods?

  a) Charter Party

  b) Bill of Lading

  c) Tonnage Certificate

  d) Load Line Certificate

- The principle of *general average* requires that:

  a) Only the shipowner bears the loss

  b) The loss is shared proportionally among ship, cargo, and freight interests

  c) The insurer pays the full cost

  d) The master decides who pays without legal basis

Materials Used in the Course

Primary Textbooks and References

- **Özman, M.** *Introduction to Maritime Law*.
- **Aydoğdu, M.** *Maritime Law and Conventions: National and International Perspectives*.
- **Rodrigue, J-P.** *The Geography of Transport Systems* (selected chapters related to maritime law and shipping).
- **Gaskell, N., Asariotis, R., & Baatz, Y.** *Bills of Lading: Law and Contracts*.
- **Tetley, W.** *Marine Cargo Claims*.

International Conventions and Legal Documents

- **SOLAS (International Convention for the Safety of Life at Sea, 1974 and Protocols)**
- **MARPOL (International Convention for the Prevention of Pollution from Ships, 1973/78)**
- **STCW (Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended)**
- **UNCLOS (United Nations Convention on the Law of the Sea, 1982)**
- **COLREG (Convention on the International Regulations for Preventing Collisions at Sea, 1972)**
- **MLC (Maritime Labour Convention, 2006)**
- **Other IMO instruments and codes**: ISM, ISPS, IMDG, IAMSAR, Load Line Convention, etc.

Supplementary Materials

- IMO official publications and codes.
- National maritime legislation and case law documents.
- Ship documents (Bill of Lading, Charter Party, Tonnage Certificate, Load Line Certificate, Oil Record Book, etc.) as examples.
- Lecture notes and instructor-prepared handouts.
- Case studies from recent maritime accidents and legal disputes.

Digital and Online Resources

- IMO Document Repository (official website).
- International Maritime Organization (IMO) e-learning resources.
- Online databases of maritime law (e.g., HeinOnline, LexisNexis, Westlaw).
- Maritime court decisions and arbitration cases databases.

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	1	1	1	2	2	1	3	3	1	2
PO2	1	1	2	2	2	1	2	2	2	2
PO3	2	2	1	1	1	2	2	3	3	3
PO4	1	1	1	1	1	2	2	2	2	1
PO5	2	2	2	1	2	3	3	2	1	3
PO6	3	3	3	3	3	2	2	2	2	2
PO7	2	2	2	2	1	2	3	3	2	1
PO8	1	1	1	1	1	2	2	2	3	2
PO9	3	3	3	3	2	2	2	3	3	2
PO10	3	3	3	3	3	3	3	3	3	3
PO11	2	3	3	3	3	2	2	2	3	3
PO12	2	3	3	3	3	2	2	3	3	3

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1 – Scope, Sources & Principles of Maritime Law	Lecture, Multimedia Presentation, Case Studies	Quizzes, Assignments, Participation
CLO2 – Legal Status, Registration & Ship Documentation	Lecture, Tutorials, Group Discussions	Quizzes, Written Assignments, Midterm Exam
CLO3 – Authority & Responsibilities of Shipmasters/Owners	Case Studies, Role-Playing, Problem-Based Learning	Assignments, Observation, Practical Exercises
CLO4 – Charter Parties, Bills of Lading & Freight Contracts	Lecture, Workshops, Scenario-Based Exercises	Assignments, Case Study Reports, Midterm Exam
CLO5 – Maritime Accidents & Legal Procedures	Case Studies, Simulation Exercises, Group Work	Practical Case Reports, Assignments, Participation
CLO6 – National Maritime Legislation & Regulations	Lecture, Tutorials, Guided Practice	Quizzes, Written Assignments, Participation
CLO7 – International Maritime Conventions	Lecture, Workshops, Case Analysis	Assignments, Quizzes, Practical Exercises
CLO8 – Safety & Marine Pollution Responsibilities	Problem-Based Learning, Group Discussions	Assignments, Case Study Reports, Participation
CLO9 – Application of Maritime Law to Case Studies	Scenario-Based Learning, Workshops, Group Exercises	Case Study Reports, Practical Exercises, Assignments
CLO10 – Legal Reasoning & Professional Skills	Role-Playing, Debates, Group Presentations	Oral Presentations, Assignments, Participation

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**	**20**	**20**
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**	**10**	**20**
Individual Reading / Research	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**144**
ECTS Credit			**4**

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 English II							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
MEN401	IV	Fall	3	4	3	0	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				-	-	-	100
Course Venue and Time				Wednesday 09.30-12.20			
Instructor information				**Cpt. Caner Özbilgiç** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4040 mehmetemin.debes@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides comprehensive training in maritime English for practical and professional use onboard vessels and in maritime operations. It covers ship structure, cargo handling, navigation and meteorology terminology, documentation, correspondence, maintenance, surveys, inspections, communication, and medical emergency procedures in English.
Course Aims and Objectives	• Develop students' proficiency in English for all aspects of shipboard operations. • Enable effective communication in navigation, meteorology, cargo handling, and ship maintenance contexts. • Train students to use correct English terminology in surveys, inspections, and maritime safety operations. • Prepare students for international maritime communication standards and emergency reporting in English.
Course Learning Outcomes	**CLO1:** Understand and correctly use English terminology related to ship structure, sections, and cargo handling. **CLO2:** Communicate effectively in navigation and meteorology operations using maritime English. **CLO3:** Prepare, manage, and interpret ship, port, and cargo documentation in English. **CLO4:** Apply English terminology in maintenance, repair, and survey procedures onboard ships. **CLO5:** Conduct effective ship-to-ship, ship-to-shore, and internal communication using IMO Standard Marine Communication Phrases (SMCP) and emergency phrases. **CLO6:** Respond accurately to medical emergencies onboard using proper English terminology and procedures. **CLO7:** Demonstrate the ability to explain operational procedures and safety instructions in English to multinational crew members. **CLO8:** Apply English terminology in reporting and documenting incidents, accidents, and safety drills onboard. **CLO9:** Interpret and respond to maritime regulations, guidelines, and notices in English. **CLO10:** Collaborate and coordinate effectively in international maritime operations using professional English communication skills.

Content of the Course

Week	*Subject*
1	**Introduction to Maritime English** • Course overview and objectives • Importance of English in maritime operations • Basic ship terminology and structure
2	**Ship Structure and Equipment** • Ship parts and compartments • Cargo handling equipment • Anchors, winches, ropes, and mooring commands
3	**Crew and Onboard Organization** • Ship crew roles and responsibilities • Work organization on board • Basic operational commands in English
4	**Navigation English I** • Voyage planning and ship management • Reporting systems on board • Common navigation terminology in meteorological reports
5	**Navigation English II** • Reading and interpreting meteorological reports • Communication of ship positions and movements • Weather-related English phrases
6	**Documentation and Correspondence I** • Onboard documentation (logbooks, journals, certificates) • Port documents • Cargo documents
7	**Documentation and Correspondence II** • Charter party contracts and voyage orders • Pre-arrival letters and cargo operation records • Official ship correspondence and protests
8	**Ship Maintenance and Repair English**

	• Maintenance planning and terminology • Principles of Planned Maintenance System • Dry docking procedures and repair documentation
9	**Surveys and Inspections English** • SOLAS, MARPOL, and other international conventions • Types of surveys and inspections • Flag state, port state, and classification society inspections
10	**Surveys and Inspections English II** • Inspection checklists • Writing survey reports in English • Practical exercises on survey documentation
11	**Communication English I** • Use of International Code of Signals • Ship-to-ship, ship-to-shore, and internal communications • IMO Standard Marine Communication Phrases (SMCP)
12	**Communication English II** • Emergency and safety communication • Sending and receiving distress messages • Practical exercises on radio communication
13	**Medical Emergency English** • Human anatomy and medical terminology • Common onboard illnesses and medications • Medical emergency communication on board
14	**Medical Emergency English II** • Shipboard medical care procedures • International medical guides and publications • Case studies on medical emergencies at sea
15	**Review and Assessment** • Recap of all topics • Practical exercises and role-playing scenarios • Final exam preparation

Methods and Techniques used in the Course

Lectures

- Presentation of maritime terminology, international conventions, and onboard procedures.
- Explanation of documentation, reports, and communication protocols.

Interactive Discussions

- Classroom discussions on real-life scenarios and maritime operations.
- Encouraging students to practice English terminology and communication.

Role-Playing and Simulations

- Shipboard situations, emergency communications, and cargo operations.
- Medical emergencies and distress reporting exercises.

Case Studies

- Analysis of ship operations, surveys, and inspection reports.
- Review of international regulations such as SOLAS, MARPOL, and SMCP.

Practical Exercises

- Writing logbook entries, voyage reports, and official correspondence.
- Reading and interpreting meteorological and navigational reports.

Audio-Visual Materials

- Use of multimedia, videos, and online resources to demonstrate maritime communication scenarios.

Assignments and Projects

- Preparation of documents, reports, and operational plans in English.
- Group projects simulating real-life shipboard communication and procedures.

Quizzes and Short Assessments

- Regular formative assessments to reinforce vocabulary and comprehension.
- Oral and written evaluations of communication proficiency.

Sample Questions

Ship Structure and Equipment

- Describe the functions of different ship deck equipment and their English terminology.
- Write a short report on a ship's mooring operation using appropriate maritime English terms.

Navigation and Meteorology

- Translate a given meteorological report into plain English for the crew.
- Explain how to report a navigational hazard to the bridge in English.

Documentation and Correspondence

- Draft a sample ship log entry for a cargo loading operation.
- Prepare a letter of protest or a voyage instruction in proper maritime English.

Maintenance and Repair

- Write a brief report on equipment failure and repair using standard maritime phrases.
- Explain planned maintenance procedures in English for a shipboard system.

Surveys and Inspections

- List the steps of a SOLAS or MARPOL inspection and describe them in English.
- Prepare a short briefing for port state control officers in English.

Communication and Emergencies

- Compose a distress message following IMO Standard Marine Communication Phrases (SMCP).
- Role-play a medical emergency on board and describe symptoms and treatment in English.

General Comprehension

- Match maritime English terms with their Turkish or technical equivalents.
- Identify correct phrases to use in various shipboard operational scenarios.

Materials Used in the Course

Textbooks and Reference Books:

- Maritime English textbooks tailored for deck and engine officers.
- IMO Standard Marine Communication Phrases (SMCP).
- Nautical publications, including navigation, meteorology, and cargo handling manuals.
- Maritime dictionaries and glossaries (English–Turkish and English–English).

Supplementary Materials:

- Sample ship logs, correspondence templates, and voyage instructions.
- Case studies and real-life maritime communication examples.
- Audio-visual materials for shipboard operations and emergency drills.
- Online resources, e-learning modules, and IMO educational guidelines.

Practical Tools:

- Simulation exercises for bridge and cargo operations.
- Role-playing for emergency communications, medical reporting, and inspection briefings.
- Written exercises for documentation, reports, and professional correspondence.

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										
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PO2	2	3	3	2	3	2	2	2	2	2
PO3	2	3	3	2	3	2	2	2	2	2
PO4	2	2	2	2	2	2	2	2	2	2
PO5	3	3	3	2	3	2	3	2	2	2
PO6	2	2	2	2	2	3	2	2	2	2
PO7	2	2	2	2	2	2	3	2	2	3
PO8	2	2	2	2	2	2	2	2	2	2
PO9	1	2	2	1	2	2	2	2	2	2
PO10	2	3	3	2	3	2	3	2	2	3
PO11	2	2	2	2	2	2	2	2	2	2
PO12	1	2	2	1	2	2	2	2	2	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1	Lecture, Multimedia Presentation, Demonstration	Quizzes, Assignments, Participation
CLO2	Lecture, Role-Playing, Simulation Exercises	Quizzes, Practical Exercises, Assignments
CLO3	Hands-on Practice, Lab Sessions, Group Exercises	Practical Exams, Lab Reports, Assignments
CLO4	Lecture, Tutorials, Case Studies	Quizzes, Assignments, Midterm Exam
CLO5	Lecture, Demonstration, Scenario-Based Exercises	Assignments, Practical Exams, Project Reports
CLO6	Lecture, Workshops, Role-Playing	Quizzes, Presentations, Assignments
CLO7	Group Exercises, Simulation, Problem-Based Learning	Observation, Practical Exams, Participation
CLO8	Case Studies, Problem-Solving Sessions, Simulations	Assignments, Midterm Exam, Practical Exercises
CLO9	Lecture, Discussions, Role-Playing	Quizzes, Participation, Assignments
CLO10	Project-Based Learning, Simulation, Group Exercises	Project Reports, Practical Exams, Assignments

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**	**20**	**20**
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			**129**
ECTS Credit			**4**

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	1	10
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: General Aspects of Marine Engineering							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
MRE401	IV	Fall	2	3	2	0	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				20	30	30	20
Course Venue and Time				Wednesday 12.30-16.20			
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 an introductory understanding of marine engineering, focusing on the basic principles, machinery, and systems used on board ships. It familiarizes students with the main and auxiliary engines, propulsion systems, heat exchangers, boilers, pumps, compressors, and other essential shipboard equipment. The course also introduces students to the safe and efficient operation of marine machinery, emphasizing the importance of shipboard safety culture, planned maintenance, and environmental awareness. Students will learn the fundamentals of diesel engine operation, power generation, steam and gas systems, and auxiliary machinery, as well as their roles in the overall performance of a vessel. By combining theoretical knowledge with practical case studies, the course aims to develop a solid foundation in marine engineering principles, preparing students for more advanced studies and professional responsibilities in the maritime industry.
Course Aims and Objectives	**Course Aims:** The aim of this course is to provide students with a solid foundation in marine engineering principles, shipboard machinery, and operational systems, while emphasizing a culture of safety and efficiency. The course seeks to equip students with the knowledge and skills required to understand, operate, maintain, and optimize ship machinery systems, both in routine and critical scenarios. **Course Objectives:** By the end of the course, students will be able to: • Comprehend the fundamental principles of internal combustion engines, diesel engines, and prime movers used in ship propulsion. • Understand the operation of main and auxiliary machinery, including electrical power systems, boilers, heat exchangers, and turbines. • Apply principles of heat transfer, steam, and gas turbine operations in practical shipboard scenarios. • Identify and operate auxiliary machinery and systems, including pumps, compressors, and fuel management equipment. • Implement safe operational procedures and cultivate a safety culture onboard. • Analyze and perform maintenance, repair, and surveying tasks for ship machinery. • Develop problem-solving skills through case studies and alternative operational scenarios. • Optimize shipboard machinery operations considering efficiency, safety, and regulatory compliance, including EEXI considerations. • Integrate theoretical knowledge with practical skills to manage complex engineering systems in real-life maritime contexts.

Course Learning Outcomes	**LO1:** Explain the principles and operational characteristics of internal combustion engines, diesel engines, and other prime movers used in ship propulsion systems, integrating fundamental concepts of steam, gas, and heat transfer. **LO2:** Describe the operation and functional interaction of main and auxiliary shipboard machinery, including electrical power generation systems, heat exchangers, boilers, turbines, pumps, compressors, and fuel management equipment. **LO3:** Apply engineering principles and problem-solving skills to analyze shipboard systems, evaluate operational efficiency, and optimize machinery performance in compliance with industry regulations, including EEXI requirements. **LO4:** Operate and monitor auxiliary machinery and related ship systems safely and effectively, demonstrating adherence to safety procedures and fostering a strong onboard safety culture. **LO5:** Plan, conduct, and document maintenance activities, inspections, troubleshooting processes, and temporary or permanent repairs on ship machinery, ensuring reliability and operational readiness. **LO6:** Evaluate alternative operational scenarios through case studies, integrate theoretical and practical knowledge to manage complex machinery systems, and communicate engineering concepts and technical findings clearly in written and oral formats.

Content of the Course

Week	*Subject*
1	Principle of Marine Engineering and shipboard safety culture
2	Internal Combustion principle and Main and Auxiliary Machineries
3	Diesel Engines & Prime-moving Propulsion, Operating local & remote-control stationaries
4	Diesel Engine Types and stationary power: Electrical energy as main and emergency
5	Principle of heat exchanging Heat machinery, Exchangers, Boilers steam and thermal oil
6	Principles of Steam and Gas theory, Steam and Gas Turbines
7	Auxiliary machinery theory and auxiliary systems of machineries
8	Mid-Term Exam Case studies (Alternative Operations)
9	Liquid transfer and displacement pumps, types with their functions
10	Compressed air/Gas Transfer and Compressors, types with their functions
11	Other ship auxiliaries, ship maneuvering facilities and consumables (Fuels, oils & FW)
12	Fuel types, consumption and efficient ship operations considerations - EEXI
13	Sources of Planned maintenance (PMS) Temporary and permanent repairs with surveying
14	Investigation, reinforcement and different approaches of maintenance
15	Final exam Case studies (Critical thinking)

Methods and Techniques used in the Course

Lectures

- Theoretical presentations of marine engineering principles, machinery systems, and shipboard safety culture.
- Use of diagrams, animations, and real-life ship schematics to illustrate engine operations, heat exchangers, and auxiliary systems.

Practical Applications / Laboratory Sessions

- Hands-on exercises with engine simulators or model systems.
- Demonstration of operating main and auxiliary machinery, propulsion, and control stations.
- Liquid transfer, pumps, compressors, and fuel system handling.

Case Studies and Problem-Solving

- Analysis of real-life scenarios, e.g., engine failure, fuel consumption optimization, maintenance scheduling.
- Group discussion of alternative operations and critical decision-making exercises.

Assignments / Reports

- Written exercises to consolidate understanding of engine types, auxiliary systems, and safety procedures.
- Research on EEXI compliance, fuel efficiency, or maintenance planning.

Group Work / Collaborative Projects

- Team-based exercises to analyze system performance, propose improvements, or simulate operational scenarios.

Exams (Mid-Term and Final)

- Evaluation of both theoretical knowledge and practical understanding.
- Case-based questions to test application of concepts in real marine engineering contexts.

Supplementary Tools

- Technical manuals, simulation software, maritime engineering publications.
- Visual aids such as schematics, charts, and videos for complex machinery systems.

Sample Questions

Theoretical Questions

- Explain the working principle of a two-stroke and a four-stroke diesel engine. Compare their advantages and disadvantages in marine applications.
- Describe the main components and functions of a steam turbine system on board. How does it differ from a gas turbine system?
- Discuss the principles of heat exchange in marine boilers and the importance of maintaining proper thermal efficiency.
- What are the key elements of a shipboard safety culture, and how do they impact daily operations and emergency preparedness?
- Define EEXI (Energy Efficiency Existing Ship Index) and explain its significance in modern ship operations.

Application / Problem-Solving Questions

- Given a scenario where a main engine shows abnormal fuel consumption, outline the steps you would take to investigate, diagnose, and rectify the issue.
- A ship's auxiliary system fails during voyage. Describe the immediate actions and long-term maintenance measures to ensure continued safe operation.
- Calculate the required pump capacity for transferring 500 m^3 of fuel within 4 hours, given the system constraints.

Case Study / Critical Thinking Questions

- Analyze a shipboard incident involving a fuel leak in the machinery space. What procedures should be followed to minimize risk to the crew, environment, and vessel?
- Evaluate two alternative propulsion options for a medium-sized vessel: diesel-electric vs. conventional diesel. Discuss performance, efficiency, and maintenance considerations.

Materials Used in the Course

Textbooks and References

- "Marine Engineering" – D.A. Taylor, Butterworth-Heinemann
- "Principles of Naval Engineering" – United States Naval Institute
- "Marine Auxiliary Machinery" – H.D. McGeorge
- "Shipboard Safety Management and Culture" – I. C. Thomas, Routledge
- "Marine Engineering Knowledge Guide" – L. G. Skipper
- Relevant International Conventions and Codes: SOLAS, MARPOL, ISM Code, STCW

Journals and Articles

- *Journal of Marine Engineering & Technology*
- *International Journal of Maritime Engineering*
- Selected papers on EEXI, fuel efficiency, and safety culture in marine vessels

Software and Tools

- Marine engine simulation software (e.g., MAN Diesel simulation tools, Wärtsilä Engine Simulators)
- Fuel consumption and efficiency calculators
- Shipboard PMS (Planned Maintenance System) software

Practical Materials

- Engine room models or cutaway diagrams of main and auxiliary machinery
- Pumps, compressors, and heat exchanger mock-ups for demonstration
- Safety equipment and emergency drills guides

Additional Resources

- IMO and classification society guidelines for machinery operation and safety
- Case studies and practical examples from shipboard 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

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**2**	**30**
Lectures	**15**	**2**	**30**
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	**2**	**3**	**6**
Project Writing	**-**	**-**	**-**
Group Work	**1**	**4**	**4**
In-class Discussion(s)	**-**	**-**	**-**
Quiz(es)	**-**	**-**	**-**
Preparation for Quiz(es)	**-**	**-**	**-**
Laboratory / Practical Applications	**2**	**2**	**4**
Assignment(s)/Homework/Class Works	**4**	**3**	**12**
Micro-Teaching Sessions	**-**	**-**	**-**
Lesson Planning	**-**	**-**	**-**
Materials Adaptation	**-**	**-**	**-**
Material Development	**-**	**-**	**-**
Draft Preparation	**-**	**-**	**-**
Drawing	**-**	**-**	**-**
Essay Writing	**-**	**-**	**-**
Tutorial(s)	**-**	**-**	**-**
Portfolio Preparation	**-**	**-**	**-**
Portfolio Presentation	**-**	**-**	**-**
Total Workload			**102**
ECTS Credit			**3**

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**
PO1	3	3	3	2	2	1
PO2	2	3	2	3	3	2
PO3	1	2	2	3	2	2
PO4	2	2	3	2	2	3
PO5	1	2	3	2	2	3
PO6	1	1	2	1	3	3
PO7	1	1	1	2	2	3
PO8	1	1	2	2	2	3
PO9	1	1	2	1	2	2
PO10	1	1	2	2	3	3
PO11	1	2	2	1	3	3
PO12	1	1	2	1	2	3

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1	Lectures, visual presentations, technical demonstrations	Midterm exam, quizzes
CLO2	Lectures, problem-solving sessions, case-based learning	Midterm exam, assignments
CLO3	Lectures, guided practice, technical document analysis	Assignments, quizzes
CLO4	Practical demonstrations, laboratory sessions, simulator-based exercises	Lab performance, practical exam
CLO5	Safety drills, scenario-based training, interactive discussions	Practical exam, participation, reports
CLO6	Workshops, maintenance practice, case studies, group activities	Final exam, project/report, performance assessment

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	-	-
Laboratory	-	-
Application	2	10
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 V							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
NAV401	IV	Spring	3	6	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 12.30-16.20			
Instructor information				**Cpt. Orhan Kamil Babaoğlu** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4040 orhankamil.babaoglu@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides students with an in-depth understanding of modern marine navigation practices and the management of shipboard navigation systems in compliance with SOLAS and IMO standards. It covers advanced voyage planning, the use and maintenance of magnetic and gyro compasses, navigation in restricted, hazardous, and polar waters, as well as under adverse weather and visibility conditions. Students learn to apply tidal and current calculations, great circle and composite sailing methods, and integrate celestial and electronic navigation techniques using radar, ARPA, ECDIS, AIS, and GPS/DGPS. The course emphasizes bridge resource management, logkeeping, and regulatory reporting, while also developing skills in search and rescue operations, pilotage, and emergency navigation. Case studies and simulator applications are used to analyze and correct navigation errors, manage risks, and ensure safe watch-keeping. Practical exercises and group projects enhance decision-making and teamwork capabilities at the operational and management levels.
Course Aims and Objectives	**Aims:** • To develop students' advanced knowledge and practical skills for safe and efficient marine navigation in compliance with SOLAS and IMO regulations. • To enable students to analyze, plan, and execute voyages under varying operational and environmental conditions using modern and traditional navigation methods. • To cultivate decision-making and bridge resource management competencies necessary for operational and management-level duties on board ships. **Objectives:** By the end of the course, students will be able to: • Understand and apply SOLAS Chapter V requirements and IMO guidelines for safe navigation. • Prepare comprehensive voyage plans considering tides, currents, traffic schemes, pilotage, and restricted waters. • Operate and maintain magnetic and gyro compasses, and correct associated errors. • Utilize terrestrial, celestial, and electronic navigation systems (radar, ARPA, GPS/DGPS, AIS, ECDIS) for accurate position fixing. • Navigate effectively in hazardous conditions, including restricted visibility, polar waters, and during adverse weather or tropical storms. • Apply harmonic and astronomical methods for tidal and great circle sailing calculations. • Perform proper logkeeping and reporting in accordance with IMO standards and ship reporting systems. • Conduct risk assessments, identify and correct navigation errors, and implement safety procedures during emergencies and search-and-rescue operations. • Demonstrate teamwork, communication, and leadership on the bridge through simulator exercises and case studies.

Course Learning Outcomes	**LO1:** Explain the principles and regulatory requirements of advanced marine navigation, including SOLAS Chapter V and bridge resource management. **LO2:** Plan and execute voyages using tidal and current data, great circle and composite sailing methods, and appropriate nautical publications. **LO3:** Demonstrate proficiency in navigation under restricted visibility, hazardous waters, adverse meteorological conditions, and polar regions. **LO4:** Operate and integrate modern electronic navigation aids (GPS/DGPS, ECDIS, AIS, radar, ARPA) and cross-check their accuracy with terrestrial and celestial observations. **LO5:** Apply tidal and harmonic calculation methods and use tidal stream atlases for route optimization and safety. **LO6:** Perform celestial navigation, including sextant use, sight reduction, and astronomical position determination. **LO7:** Identify and correct common navigation errors and evaluate their impact on voyage safety and efficiency. **LO8:** Analyze and respond to emergency navigation scenarios such as SAR operations, tropical storm avoidance, and bridge communication failures. **LO9:** Prepare and maintain proper navigation documentation, including logs, reports, and compliance with IMO ship reporting systems. **LO10:** Demonstrate teamwork and decision-making skills in simulated navigation scenarios, integrating all navigational methods into operational and management-level practices.

Content of the Course

Week	*Subject*
1	Course introduction and overview of Advanced Navigation SOLAS Chapter V requirements Basics of Bridge Resource Management (BRM) Introduction to Magnetic and Gyro Compasses: structure, principles, common errors
2	Magnetic & Gyro Compass error correction and maintenance Types of gyro compasses, operation principles
3	Principles of Voyage Planning: elements, stages, required documentation Logbook keeping and reporting procedures
4	Navigation in Restricted Waters: channel navigation, shallow water effects, under keel clearance Traffic Separation Schemes (TSS), narrow channels, collision regulations
5	Navigation in Restricted Visibility: radar plotting, ARPA use, sound signals Electronic Navigation Aids I: radar, AIS, GPS/DGPS, ECDIS integration, error correction
6	Navigation in Adverse Weather: heavy weather navigation, storm avoidance, ice navigation Navigation for Search and Rescue (SAR) operations
7	Midterm Exam (Includes an application task such as radar/ARPA simulation and voyage planning scenario)
8	Tides and Currents: theory, calculation methods, use of tidal stream atlases and current tables Nautical publications for tide/current data Harmonic method for tide calculations
9	Great Circle and Composite Sailing: theory, plotting, advantages and limitations Great Circle navigation using astronomical tables (practical component)
10	Pilotage: use of pilot books, port approach planning, pilot embarkation procedures Terrestrial Position Fixing: visual bearings, radar ranges, parallel indexing
11	Polar Navigation and ice navigation techniques Navigation during tropical storms and cyclones
12	Celestial Navigation I: sextant use, sight reduction, position determination Celestial Navigation II: spherical triangles for astronomical position fixing
13	Electronic Navigation Aids II: integrated bridge systems, sensor integration Navigation Errors: identification, causes, and correction methods
14	Management of all stages of navigation: risk assessment, ISM Code and SOLAS integration Case studies: integrated voyage planning and position cross-checking
15	Course review and comprehensive case studies Final Exam (includes applied scenario and theoretical assessment)

Methods and Techniques used in the Course

- Lectures
- Practical Exercises
- Case Studies
- Nautical Plotting and Simulations
- Problem Solving Sessions

Sample Questions

- Explain the main sources of error in a magnetic compass and describe methods for correction.
- Calculate the tidal height at a given location using the harmonic method.
- Describe the steps to determine a vessel's position using astronomical navigation in polar regions.
- How do gyro compass errors affect route planning and how are these corrected?
- Discuss how tidal currents influence voyage planning and provide an example calculation.

Materials Used in the Course

- Bowditch, "The American Practical Navigator", National Geospatial Intelligence Agency, 2024
- Admiralty Tide Tables
- Nautical Almanac
- Gyro and Magnetic Compass Manuals
- Radar and ECDIS User Guides

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										
	LO1	**LO2**	**LO3**	**LO4**	**LO5**	**LO6**	**LO7**	**LO8**	**LO9**	**L10**
PO1	2	2	2	2	2	2	2	1	2	1
PO2	3	1	2	3	1	2	1	2	2	1
PO3	2	2	2	1	1	1	2	3	2	1
PO4	2	2	2	2	2	1	2	1	1	2
PO5	2	1	3	2	1	1	1	2	1	2
PO6	3	1	1	1	0	0	1	1	2	1
PO7	1	1	1	1	0	0	1	1	1	0
PO8	1	0	0	0	0	0	1	1	1	1
PO9	1	0	1	1	0	0	1	1	1	2
PO10	1	0	1	1	0	0	1	2	2	1
PO11	0	0	0	0	0	0	0	0	0	1
PO12	1	1	1	1	1	1	1	1	1	1

Course Learning Outcomes/ Evaluation Method		
Course Learning Outcomes (CLOs)	**Teaching Method**	**Assessment Method**
LO1	Lecture, Question-Answer	Midterm Exam, Final Exam
LO2	Lecture, Homework,	Midterm Exam, Final exam
LO3	Lecture, Question-Answer	Midterm Exam, Final exam
LO4	Lecture	Midterm Exam, Final Exam
LO5	Lecture	Quizzes, Midterm Exam, Final Exam
LO6	Lecture, Question-Answer	Midterm Exam, Final Exam
LO7	Lecture, Q&A	Midterm Exam, Final Exam
LO8	Lecture, Q&A	Midterm Exam, Final Exam
LO9	Lecture, Hands-on Practice	Midterm Exam, Final Exam
LO10	Lecture, Hands-on Practice	Midterm Exam, Final Exam

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**4**	**60**
Midterm Exam	**1**	**3**	**3**
Preparation for Midterm Exam	**1**	**10**	**10**
Final Exam	**1**	**3**	**10**
Preparation for Final Exam	**1**	**15**	**15**
Presentation(s)	**-**	**-**	**-**
Preparation for Presentation(s)	**-**	**-**	**-**
Research for Project(s)/Essay(s)	**-**	**-**	**-**
Project Writing	**-**	**-**	**-**
Group Work	**-**	**-**	**-**
In-class Discussion(s)	**15**	**2**	**30**
Quiz(es)	**2**	**3**	**6**
Preparation for Quiz(es)	**-**	**-**	**-**
Laboratory	**-**	**-**	**-**
Assignment(s)/Homework/Class Works	**2**	**3**	**6**
Micro-Teaching Sessions	**-**	**-**	**-**
Lesson Planning	**-**	**-**	**-**
Materials Adaptation	**-**	**-**	**-**
Material Development	**-**	**-**	**-**
Draft Preparation	**-**	**-**	**-**
Drawing	**-**	**-**	**-**
Essay Writing	**-**	**-**	**-**
Tutorial(s)	**-**	**-**	**-**
Portfolio Preparation	**-**	**-**	**-**
Portfolio Presentation	**-**	**-**	**-**
Total Workload			**155**
ECTS Credit			**6**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	15	10
Laboratory	-	-
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	-	-
Quiz	2	10
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: Ship Construction II							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
NRC401	IV	Fall	2	2	1	2	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				20	40	40	-
Course Venue and Time				Friday / 09:30 – 11:20			
Instructor information				**Prof. Dr. Deniz Ünsalan** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4060 deniz.unsalan@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides an in-depth study of ship structural design, stability, and damage management. It focuses on advanced ship construction materials, welding techniques, bulkheads, doors, and corrosion prevention. Students will learn about surveys, inspections, and maintenance procedures for hull and machinery, as well as principles of transverse, dynamic, and damaged ship stability. The course also covers international regulations, IMO guidelines, and the practical application of maritime English for shipboard operations, cargo handling, and crew management. By the end of the course, students will be able to analyze, evaluate, and apply ship construction and stability concepts in both theoretical and practical maritime contexts.
Course Aims and Objectives	The course aims to provide students with a comprehensive understanding of advanced ship construction principles, ship stability, and damage management. It seeks to equip students with the knowledge and skills required to evaluate ship structures, apply international regulations, and ensure safe and efficient ship operations. • To understand ship construction materials, welding techniques, and structural components. • To analyze the principles of transverse, dynamic, and damaged ship stability. • To conduct and interpret surveys for hulls, machinery, and propeller shafts. • To apply IMO guidelines and international regulations related to ship stability and damage control. • To develop practical skills in shipboard operations, including cargo handling and crew organization. • To use maritime English effectively for ship construction, stability, and operational communication. • To evaluate and mitigate the effects of corrosion, damage, and water ingress on ship safety and performance.
	CLO1: Identify and describe shipbuilding materials, structural components, and their functions. **CLO2:** Explain different types of welding, common welding defects, and methods for inspection and quality control. **CLO3:** Analyze ship stability, including transverse, dynamic, and initial stability, and interpret stability curves.

Course Learning Outcomes	**CLO4:** Evaluate the impact of damage, flooding, and water ingress on ship trim and stability, applying IMO guidelines. **CLO5:** Conduct and interpret hull, machinery, and propeller shaft surveys according to international standards. **CLO6:** Apply principles of corrosion prevention, including galvanic corrosion control, in ship maintenance. **CLO7:** Utilize maritime English terminology related to ship structure, stability, and onboard operations. **CLO8:** Plan and organize shipboard operations, including crew roles, cargo handling, and emergency procedures. **CLO9:** Integrate knowledge of international conventions and codes to ensure compliance in ship construction and safety management. **CLO10:** Demonstrate the ability to synthesize ship construction, maintenance, and operational knowledge to solve practical maritime engineering problems.

Content of the Course

Week	*Subject*
1	**Introduction to Ship Structure** • Overview of ship construction materials • Types of ships and structural components
2	**Introduction to Ship Structure** • Overview of ship construction materials • Types of ships and structural components
3	**Bulkheads and Structural Partitions** • Types of bulkheads and their functions • Fire and watertight bulkheads
4	**Doors and Hatches** • Watertight and weather-resistant doors and hatches • Design and operational considerations
5	**Corrosion in Ships** • Corrosion and galvanic corrosion • Methods for prevention and protection
6	**Surveys and Inspections – Part 1** • Propeller shaft surveys • Dry-docking inspections
7	**Surveys and Inspections – Part 2** • Hull and machinery renewal surveys • Inspection reports and procedures
8	**Ship Stability – Basics** • Initial transverse stability • Static stability curves • Factors affecting stability
9	**Ship Stability – Advanced Concepts** • Stability deterioration • Dry-docking stability considerations • Dynamic stability
10	**Damage and Flooding Effects on Trim and Stability – Part 1** • Damaged ship stability principles • IMO regulations regarding damaged ship stability
11	**Damage and Flooding Effects on Trim and Stability – Part 2** • Effects of flooding and damage on trim and stability • Preventive measures and corrective actions
12	**Stability Theories and IMO Guidelines** • Theoretical aspects of ship trim and stability

	• IMO recommendations and international codes
13	**Maritime English – Ship Structure and Components** • Cargo handling equipment • Windlasses, rope winches, anchors, and mooring lines • Navigation commands and shipboard terminology
14	**Maritime English – Crew and Shipboard Organization** • Crew roles and responsibilities • Work organization aboard ship
15	**Maritime English – Crew and Shipboard Organization** • Crew roles and responsibilities • Work organization aboard ship

Methods and Techniques used in the Course

Lectures and Presentations – Detailed explanations of ship structures, welding techniques, stability principles, and international regulations.

Case Studies – Analysis of real-world incidents related to ship damage, flooding, and stability issues.

Practical Workshops – Hands-on exercises in welding inspection, structural assessment, and stability calculations.

Simulations – Use of software and modeling tools to study ship trim, stability, and damage scenarios.

Shipyard Visits / Field Trips – Observations of shipbuilding processes, materials, and structural elements in practice.

Group Discussions and Seminars – Collaborative problem-solving on ship construction and safety challenges.

Maritime English Exercises – Practice of technical terminology and documentation relevant to ship construction and stability.

Assessment Exercises – Calculations, surveys, and scenario-based assignments to reinforce learning.

Sample Questions

- Explain the different types of welding defects and describe the methods used to detect them.
- Discuss the role of bulkheads and watertight doors in maintaining ship stability.
- Describe the procedures and purpose of a propeller shaft survey.
- Calculate the transverse initial stability (GM) of a ship given the necessary data.
- Analyze the effects of flooding in a compartment on a ship's trim and stability.
- Explain the difference between static and dynamic stability and provide examples of each.
- Discuss the measures required to prevent and control corrosion and galvanic corrosion in ships.
- Outline the IMO regulations related to damaged ship stability.
- Describe the main structural components of a ship and their functions.
- Translate the following ship-related terms into proper maritime English: "ırgat," "halat vinci," "demir donanımı."

Materials Used in the Course

Textbooks and Reference Books:

- "Ship Construction" – David J. Eyres & George J. Bruce (Latest Edition)
- "Principles of Naval Architecture" – Volume II: Stability, Strength, and Design (SNAME)
- "Ship Hydrostatics and Stability" – Adrian Biran
- "Ship Design and Construction" – American Bureau of Shipping (ABS) Guide

Supplementary Reading:

- Research papers on ship hull optimization and stability
- IMO guidelines on damaged ship stability and safety regulations
- Case studies of recent shipbuilding projects

Software / Simulation Tools:

- Hydrostatic and stability calculation software (e.g., Maxsurf, NAPA)
- Structural analysis programs for ships (e.g., ANSYS, RhinoShip)
- Spreadsheet tools for hydrostatic and weight calculations

Other Materials:

- Ship lines plans, cross-sections, and midship plans
- Drafting and design templates
- Laboratory models or scaled ship sections for demonstration

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	2	2	2	3	3
PO2	2	2	2	2	2	2	2	3	2	2
PO3	3	3	3	3	3	2	2	2	3	3
PO4	2	2	2	3	3	2	2	2	2	3
PO5	3	3	3	3	3	3	2	3	3	3
PO6	2	2	2	2	2	3	2	2	2	2
PO7	1	1	2	2	2	1	1	2	1	2
PO8	1	1	1	1	1	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	1	1
PO10	1	1	2	2	2	1	1	2	1	2
PO11	1	1	1	1	1	1	1	1	1	1
PO12	1	1	1	1	1	1	1	1	1	1

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1	Lecture, Multimedia Presentation, Hands-on Shipyard/Workshop Demonstration	Quizzes, Assignments, Practical Observations
CLO2	Lecture, Demonstration Videos, Lab Exercises on Welding and Inspection	Lab Reports, Quizzes, Practical Exams
CLO3	Lecture, Problem-Solving Sessions, Case Studies on Stability Calculations	Assignments, Midterm Exam, Practical Exercises
CLO4	Lecture, Simulation Exercises, Case Studies on Damaged Ship Stability	Case Study Reports, Assignments, Practical Exams
CLO5	Lecture, Ship Surveys Demonstration, Onboard Inspections	Practical Exams, Lab Reports, Assignments
CLO6	Lecture, Demonstration, Hands-on Maintenance Exercises	Assignments, Quizzes, Practical Exams
CLO7	Lecture, Workshops on Maritime English, Role-Playing	Oral Presentations, Written Assignments, Quizzes
CLO8	Lecture, Planning Exercises, Case Studies	Assignments, Group Projects, Practical Exercises
CLO9	Lecture, Case Studies, Group Discussions	Quizzes, Assignments, Participation
CLO10	Scenario-Based Exercises, Integration Projects, Case Studies	Project Reports, Practical Exams, Assignments

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	-	-	-
Lectures	**15**	**3**	**45**
Midterm Exam	**1**	**2**	**2**
Preparation for Midterm Exam	**1**	**5**	**5**
Final Exam	**1**	**2**	**2**
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	**1**	**5**	**5**
Individual Reading / Research	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**79**
ECTS Credit			**2**

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	1	10
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: Ship Manoeuvering							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
SMA401	IV	Fall	3	5	2	2	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				-	-	-	100
Course Venue and Time				Friday / 09:30 – 12:20			
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	This course provides a comprehensive understanding of ship handling, maneuvering, and safe navigation under various operational and environmental conditions. Students will study the fundamental principles of ship maneuvering, including the effects of propulsive forces, resistances, rudder actions, thrusters, and mooring lines. The course emphasizes practical applications such as turning circle calculations, shallow water and squat effects, anchoring procedures, and tug assistance. Safe watchkeeping practices, bridge resource management, and compliance with Vessel Traffic Services (VTS) are integrated throughout the course to enhance operational decision-making and situational awareness. Special attention is given to collision avoidance, grounding prevention, and damage control procedures, including emergency steering, towing arrangements, and coordinated rescue operations. Students will also explore the management of onboard safety systems, including life-saving appliances, fire-fighting equipment, and emergency response protocols. The course concludes with the development of emergency and damage control plans, as well as the organization and management of medical care onboard. Through case studies, simulations, and practical exercises, students gain the skills required to ensure the safety, security, and efficiency of ship operations in both normal and emergency situations.
Course Aims and Objectives	The aim of this course is to equip students with the theoretical knowledge and practical skills required for safe and effective ship maneuvering, watchkeeping, and emergency management. The course focuses on understanding ship handling characteristics, navigation principles, collision avoidance, damage control, and the operation of onboard safety and life-saving systems. It also aims to develop students' ability to make informed decisions under normal and emergency conditions in compliance with international maritime regulations. • Understand the fundamental principles of ship maneuvering, including the effects of propulsion, rudders, thrusters, and environmental conditions. • Plan, execute, and monitor safe navigation in coastal, restricted, and open waters. • Apply safe watchkeeping practices and bridge resource management to ensure effective onboard operations. • Interpret and comply with collision prevention rules, VTS reporting requirements, and international maritime safety regulations. • Implement damage control procedures, emergency steering, and towing arrangements to maintain vessel integrity. • Coordinate rescue and assistance operations while ensuring the safety and security of crew and passengers. • Operate lifesaving, fire-fighting, and other safety systems onboard, maintaining readiness under emergency conditions.

	• Develop and apply emergency and damage control plans, including contingency measures for fire, flooding, grounding, or collision scenarios. • Organize and manage medical care onboard, including first aid and handling incidents involving dangerous cargoes.
Course Learning Outcomes	**CLO1:** Demonstrate safe ship handling skills by effectively maneuvering vessels under varying environmental conditions, using main engines, propellers, rudders, and thrusters. **CLO2:** Apply principles of watchkeeping on the bridge, including organizing watch schedules, monitoring navigation systems, and ensuring proper handovers. **CLO3:** Perform voyage planning and navigation in restricted waters, coastal areas, and under limited visibility, integrating all available navigational aids and techniques. **CLO4:** Implement bridge resource management (BRM) by allocating resources, prioritizing tasks, maintaining situational awareness, and communicating effectively with crew members. **CLO5:** Interpret and adhere to collision avoidance rules and vessel traffic service (VTS) reporting requirements in compliance with international maritime regulations. **CLO6:** Execute damage control procedures and emergency steering techniques to preserve vessel integrity after grounding, collision, or loss of watertight integrity. **CLO7:** Coordinate emergency response operations, including towing, firefighting, abandonment, and rescue operations, while maintaining crew and passenger safety. **CLO8:** Operate and maintain life-saving, fire-fighting, and other onboard safety systems, ensuring they are ready for immediate deployment during emergencies. **CLO9:** Develop and implement emergency and contingency plans, incorporating ship structure, damage control measures, and risk mitigation strategies. **CLO10:** Manage medical care onboard, including the use of international medical guides, signal codes, and first aid procedures, particularly for incidents involving dangerous cargoes.

Content of the Course

Week	*Subject*
1	**Introduction to Ship Handling** • Importance and objectives of ship handling • Safety considerations • Factors affecting ship maneuvering • Environmental conditions & ship characteristics
2	**Propulsive Forces and Resistances** • Air and water resistance in maneuvering • Main engines: effectiveness, advantages, disadvantages • Overview of engine types in maneuvering
3	**Propellers and Rudder Effects I** • Propeller types: fixed pitch, controllable pitch, right/left-handed, twin-screw effects • Rudder effects on single-screw vessels
4	**Rudder Effects II and Thrusters** • Rudder effects on twin-screw vessels • Bow thrusters & stern thrusters: working principles and combined use with rudder
5	**Mooring Lines in Maneuvering** • Mooring line operations during berthing, unberthing, and other maneuvers • Coordination of lines with propulsion and steering
6	**Turning Circle and Shallow Water Effects** • Turning circle: tactical diameter, advance, transfer • Shallow water effects: squat phenomenon, bank effect, narrow channel navigation
7	**Anchoring and Tug Assistance** • Safe anchoring techniques and securing a vessel • Tug operations and towline connections in maneuvering
8	**Integrated Maneuvering** • Case studies combining propulsion, rudder, thrusters, mooring lines, and tug assistance • Simulation exercises for integrated ship handling
9	**Safe Watchkeeping I** • Bridge organization • Duties and responsibilities of officers • Fitness for duty • Deck watch, port watch, anchoring watch, stern/tug watch, navigation watch
10	**Safe Watchkeeping II & Ship Reporting** • Voyage planning and preparation of documentation • Considerations during watch handover • System checks during navigation • Navigation under restricted conditions, coastal and restricted waters • Preparations for port entry • Ship reporting systems and compliance with VTS reporting

11	**Safe Watchkeeping II & Ship Reporting** • Voyage planning and preparation of documentation • Considerations during watch handover • System checks during navigation • Navigation under restricted conditions, coastal and restricted waters • Preparations for port entry • Ship reporting systems and compliance with VTS reporting
12	**Collision Prevention and Environmental Protection** • Collision prevention rules at sea • Marine environment protection and regulations
13	**Collision Prevention and Environmental Protection** • Collision prevention rules at sea • Marine environment protection and regulations
14	**Collision, Grounding, and Damage Control** • Precautions for intentional grounding • Actions before and after grounding or collision • Refloating techniques (with or without assistance) • Damage control implementation
15	**Emergency Planning and Medical Care Onboard / Review** • Development of emergency and damage control plans • Fire prevention, alarm systems, and extinguishing methods • Life-saving appliance operation • Organization and management of medical care onboard • International medical guides and first aid for hazardous materials • Final review and integrated scenario discussion

Methods and Techniques used in the Course

Lectures: Theoretical instruction covering ship maneuvering principles, watchkeeping, emergency management, and regulatory frameworks.

Practical Simulations: Use of ship handling simulators and scenario-based exercises to replicate real-life navigation, maneuvering, and emergency situations.

Case Studies: Analysis of past maritime incidents, including collisions, groundings, and emergency operations, to develop problem-solving skills.

Group Work: Collaborative assignments and projects to enhance teamwork, decision-making, and bridge resource management skills.

Workshops/Hands-on Exercises: Exercises focusing on shipboard equipment, life-saving appliances, fire-fighting systems, and emergency response procedures.

Assignments: Written and practical tasks, including voyage planning, system checks, and emergency plan development, to reinforce theoretical knowledge.

Mid-term and Final Assessments: Evaluation of students' theoretical understanding and practical application through written exams and simulation-based performance assessments.

Self-directed Learning: Encouragement of independent study using manuals, international regulations, and guidelines (SOLAS, IMO Codes, VTS manuals, etc.) for in-depth understanding.

Sample Questions

- Explain the key principles of safe watchkeeping and the responsibilities of bridge officers during navigation in restricted waters.
- Describe the procedures for collision avoidance at sea, including the application of COLREGs in practical scenarios.
- Discuss the factors affecting ship maneuvering, including environmental conditions and vessel characteristics, and how these influence tactical decisions.
- Outline the steps for emergency steering and towing arrangements in case of main steering failure.
- A vessel has run aground. Explain the immediate actions to be taken to refloat the vessel and implement damage control measures.
- Compare and contrast the use of bow thrusters and stern thrusters in maneuvering operations, including limitations and combined use with rudders.
- Explain the role and principles of Bridge Resource Management (BRM) in ensuring safe navigation and effective team coordination.
- Describe the methods of maintaining operational readiness of life-saving, fire-fighting, and other safety systems onboard.
- Discuss the procedures for planning and coordinating rescue and assistance operations during an emergency at sea.
- Explain the importance of monitoring and reporting under Vessel Traffic Services (VTS) and ship reporting systems during navigation in congested areas.
- Evaluate the effects of grounding or collision on vessel stability and trim and describe measures to minimize further damage.
- Discuss the organization and management of medical care onboard, including provisions for incidents involving dangerous goods.

Materials Used in the Course

Textbooks and Reference Books:

- IMO Bridge Procedures Guide
- International Regulations for Preventing Collisions at Sea (COLREGs)
- Ship Maneuvering Simulator Manuals
- Maritime Emergency Management and Damage Control references
- Publications on Ship Stability and Cargo Handling

Electronic and Digital Resources:

- Ship handling simulation software (e.g., TRANSAS, Kongsberg, or TECHSIM simulators)
- Electronic Navigation Charts (ENC) and ECDIS manuals
- Voyage planning software and tools

Practical Tools and Equipment:

- Model ship handling setups (if available)
- Visual aids for bridge organization and resource management
- Safety and life-saving appliances demonstration kits

Regulations and Codes:

- SOLAS (Safety of Life at Sea)
- MARPOL (Marine Pollution)
- ISM Code (International Safety Management)
- VTS reporting guidelines
- IMDG Code for dangerous cargo handling

Supplementary Materials:

- Case study documents and reports
- Video demonstrations of shipboard emergency drills, anchoring, and mooring operations
- Charts, diagrams, and tables for stability and trim calculations

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	2	2	2	2	2
PO2	2	2	2	3	3	2	2	2	2	2
PO3	3	3	3	3	3	3	3	2	2	2
PO4	2	2	2	2	2	3	3	3	3	2
PO5	3	2	2	3	3	2	2	3	3	3
PO6	2	2	2	2	2	2	2	2	2	2
PO7	1	1	1	2	2	1	1	1	1	1
PO8	1	1	1	1	1	1	1	1	1	1
PO9	1	1	1	1	1	1	1	1	1	1
PO10	2	2	2	2	2	2	2	2	2	2
PO11	1	1	1	1	1	1	1	1	1	1
PO12	1	1	1	1	1	1	1	1	1	1

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1	Lecture, Multimedia Presentation, Case Studies	Quizzes, Assignments, Midterm Exam
CLO2	Lecture, Demonstration, Simulation Exercises	Lab Reports, Practical Exercises, Midterm Exam
CLO3	Lecture, Problem-Solving Sessions, Simulation	Assignments, Practical Exercises, Midterm Exam
CLO4	Lecture, Case Studies, Group Discussions	Quizzes, Assignments, Midterm Exam
CLO5	Practical Exercises, Simulation, Scenario-Based Learning	Practical Exams, Lab Reports, Assignments
CLO6	Tutorials, Simulation Exercises, Demonstrations	Quizzes, Assignments, Practical Exams
CLO7	Role-Playing, Group Work, Simulation Exercises	Observation, Assignments, Practical Exams
CLO8	Problem-Based Learning, Case Studies, Simulation	Assignments, Practical Exercises, Midterm Exam
CLO9	Lecture, Discussions, Case Analysis	Quizzes, Assignments, Participation
CLO10	Scenario-Based Exercises, Simulation, Group Projects	Project Reports, Practical Exams, Assignments

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	**15**	**1**	**15**
Lectures	**15**	**4**	**60**
Midterm Exam	**1**	**3**	**3**
Preparation for Midterm Exam	**1**	**10**	**10**
Final Exam	**1**	**3**	**3**
Preparation for Final Exam	**1**	**20**	**10**
Presentation(s)	-	-	-
Preparation for Presentation(s)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	-	-	-
Group Work	-	-	-
In-class Discussion(s)	**15**	**2**	**30**
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	-	-	-
Assignment(s)/Homework/Class Works	**1**	**20**	**20**
Individual Reading / Research	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**151**
ECTS Credit			**5**

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: Technical Ship Management II							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
TSM401	IV	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				Tuesday / 10:30 – 12:20			
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 an in-depth study of modern ship management practices with a particular focus on survey procedures, regulatory compliance, and safety management standards. It introduces students to the theoretical foundations of the International Safety Management (ISM) Code, ship structural integrity, and the concept of fitness for service. The course covers the principles and applications of internal and external surveys, including regular and irregular inspections, as well as the roles of flag states, port states, classification societies, and third-party organizations in ensuring maritime safety and operational standards. Students will explore documentation and certification requirements, such as initial, annual, intermediate, renewal, and additional surveys, alongside practical methods for physical inspections of hulls, machinery, cargo spaces, and other ship compartments. Emphasis is placed on identifying and addressing non-conformities, deficiencies, detentions, and legal implications related to unfitness. Through real-world case studies and applications, students will develop the ability to prepare vessels for Port State Control (PSC), third-party vetting (OCIMF, CDI, SIRE, RightShip), and harmonized surveys (HSSC). The course also includes reporting strategies, performance evaluations, and continuous self-assessment techniques to maintain compliance with major international conventions and industry requirements (MARPOL, BWM, IBC, IMDG, ICS, ILO, MLC). Practical exercises and case studies guide students in applying survey principles, developing improvement strategies, and ensuring vessels are prepared for inspections by various regulatory and commercial bodies.
Course Aims and Objectives	The course aims to provide students with a comprehensive understanding of ship management, focusing on safety, operational efficiency, and regulatory compliance. It emphasizes the theoretical foundations and practical applications of the International Safety Management (ISM) Code, ship surveys, and inspection procedures. Students will gain knowledge of vessel documentation, classification, and certification requirements, as well as the roles of flag states, port states, classification societies, and third-party inspectors. Additionally, the course aims to develop students' ability to plan, conduct, and evaluate surveys, assess vessel fitness, and implement corrective actions to maintain operational standards. Through case studies and practical exercises, students will acquire the skills necessary for continuous monitoring, self-assessment, and improvement of shipboard operations in alignment with international conventions and industry standards. **Course Objectives** By the end of the course, students should be able to: • Understand the theoretical principles behind ship management, ISM Code implementation, and vessel fitness concepts.

	• Identify and explain the types of surveys (initial, annual, intermediate, periodical, renewal, and additional) and their purposes. • Demonstrate knowledge of the roles and responsibilities of flag states, port states, classification societies, and third-party inspection bodies. • Apply methods for inspecting hulls, machinery, cargo spaces, and other ship compartments, and evaluate the results. • Recognize non-conformities, deficiencies, detentions, and legal implications of unfitness, and propose corrective measures. • Prepare vessels for Port State Control (PSC), third-party vetting inspections, and harmonized surveys. • Develop reporting strategies, maintain documentation, and ensure compliance with international maritime conventions and industry requirements (e.g., MARPOL, BWM, IBC, IMDG, ICS, ILO, MLC). • Perform self-assessment and continuous improvement of shipboard operations using practical case studies and matrix evaluations.
Course Learning Outcomes	**CLO1:** Explain the principles of ship management and ISM Code implementation in relation to safety, quality, and environmental protection. **CLO2:** Identify and distinguish different types of surveys (initial, annual, intermediate, periodical, renewal, and additional) and their regulatory requirements. **CLO3:** Recognize the roles and responsibilities of maritime authorities including flag states, port states, classification societies, and third-party inspection bodies. **CLO4:** Conduct inspections and evaluate ship conditions, including hull, machinery, cargo spaces, and other compartments, applying appropriate measurement and testing methods. **CLO5:** Detect and analyze non-conformities and deficiencies, determine their legal and operational implications, and propose corrective actions. **CLO6:** Prepare and manage ships for inspections and audits, including Port State Control (PSC), third-party vetting, and harmonized surveys. **CLO7:** Develop and implement reporting strategies and documentation that ensure compliance with international conventions and industry standards (e.g., MARPOL, BWM, IBC, IMDG, ICS, ILO, MLC). **CLO8:** Apply self-assessment techniques and continuous monitoring to maintain vessel fitness and operational readiness. **CLO9:** Integrate theoretical knowledge with practical case studies, demonstrating problem-solving and decision-making skills in real-world ship management scenarios. **CLO10:** Communicate technical findings effectively to stakeholders, including ship crew, management, and inspection authorities.

Content of the Course

Week	*Subject*
1	**General Aspects of Ship Management** Theory behind the ISM-Code, Overall reminder of ship's structure and equipment, concept of fitness.
2	Principles of the internal and external surveys, regular/irregular surveys. Understanding of authorities: Flag state/port state, classification societies/class surveyor, insurance survey, 3'rd parties/3'rd party inspections and self-assessment
3	Registered documentational requirements and ship certificates, Initial survey, Annual Survey, Intermediate survey, periodical survey, renewal survey, additional surveys
4	Control methods of a physical survey of the hull and machinery, docking, tank inspections, test methods, inspection of: Machinery spaces, cargo area, other compartments, engines, running parts, measurement control methods, and reporting
5	Non-conformities, deficiencies, detention and arrest: Legal aspects of un-fitness and limitations, reporting, rectifications and clearance
6	**Case study 1** Preparation/keeping a ship "fit" for a Port State Control (PSC)
7	**Case Study 2** Self-assessment of the ship crew and continuous survey onboard
8	**Mid-term** Application (Principles of survey and requirements)
9	Performance evaluation of the ships by 3'rd parties & vetting's: Oil majors (OCIMF/CDI, SIRE), Right Ship, SIGTTO, port, harbor and terminal inspections
10	Reporting strategies, rectifications & certifications
11	**Case study 1** Preparation/keeping a ship "fit" for a 3'rd party inspections
12	**Case Study 2** Continuous survey and harmonized survey (HSSC) & certifications
13	**Case study 3** Conventional industrial requirements, MoU's, Flag state, Recognized parties and matching standards (MARPOL, BWM, IBC, IMDG, ICS, ILO, MLC etc)
14	Keeping ready and strategies for improvement / advanced applications
15	**Final Exam** Application (Self-assessment and preparation of matrixes)

Methods and Techniques used in the Course

Lectures – Interactive lectures to present the theoretical background of ship management, ISM Code, surveys, and inspections.

Case Studies – Analysis of real-life and hypothetical scenarios to understand survey preparation, vetting, and self-assessment procedures.

Practical Exercises / Applications – Hands-on exercises simulating inspection checklists, hull/machinery surveys, and certificate tracking.

Group Work – Collaborative tasks for problem-solving, such as developing ship compliance matrices or survey preparation plans.

Assignments – Written assignments to reinforce theoretical concepts and apply them to practical ship management scenarios.

Projects – Extended project work to develop comprehensive strategies for maintaining ship fitness, safety, and regulatory compliance.

Mid-term and Final Evaluations – Combination of written and practical exams to assess theoretical understanding and application skills.

Presentations – Student presentations on case studies, survey procedures, or improvements in ship management practices to foster communication skills.

Sample Questions

Theoretical Questions

- Explain the main objectives of the ISM Code and how it ensures safety and environmental protection on board.
- Describe the roles and responsibilities of flag states, port states, and classification societies in ship management.
- Compare initial, annual, intermediate, and renewal surveys of a vessel. What are the key differences in scope and procedures?
- Discuss the types of non-conformities that may be identified during a survey and the legal implications of un-fitness for a ship.
- Explain the concept of self-assessment on board and its importance in continuous survey practices.

Practical / Application Questions

- Given a sample ship's machinery and hull inspection checklist, identify potential deficiencies and propose corrective actions.
- Prepare a survey preparation plan for a Port State Control inspection, including necessary documents, crew training, and reporting strategies.
- Evaluate a mock vetting report from a 3rd party inspection (e.g., OCIMF SIRE) and identify the areas that require improvement for compliance.
- Create a matrix to track all statutory and class certificates of a vessel, indicating the next inspection and renewal dates.
- Using a case study, perform a self-assessment of the ship crew and onboard continuous survey practices, highlighting key areas for improvement.

Materials Used in the Course

Textbooks and References

- International Safety Management (ISM) Code – IMO publication
- Ship Surveying and Certification – P. Jackson, Nautical Institute
- Port State Control Guide – IACS / Paris MoU
- Marine Surveying: Principles and Practice – D.J. House
- Maritime Legislation & Regulations – IMO, national maritime authorities

Journals and Articles

- *The Nautical Institute Journal*
- *Marine Policy*
- Case studies from recent Port State Control inspections
- Industry vetting reports (OCIMF, RightShip, SIGTTO)

Software and Tools

- Ship inspection checklist templates (digital / Excel)
- Survey reporting tools (e.g., Vetting forms, PSC checklists)
- Simulation software for hull, machinery, and cargo inspections

Additional Materials

- IMO conventions and codes: SOLAS, MARPOL, IBC, IMDG, ISM, MLC
- Sample survey reports
- Ship certificates and document examples (registration, class, statutory certificates)
- Guidelines from classification societies and recognized organizations

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	3	3	2	2	2	2	2
PO2	2	2	2	2	3	3	2	2	2	2
PO3	3	2	2	3	2	2	3	2	3	3
PO4	2	2	2	2	3	3	2	3	2	2
PO5	3	3	2	3	2	3	3	2	3	3
PO6	2	2	2	2	2	2	2	3	2	2
PO7	1	1	2	1	2	1	2	2	2	2
PO8	1	1	1	2	1	2	2	2	1	2
PO9	2	2	2	2	2	2	2	2	2	2
PO10	2	2	2	2	2	2	2	2	2	2
PO11	2	2	2	2	2	2	2	2	2	2
PO12	2	2	2	2	2	2	2	2	2	2

Course Learning Outcomes/ Evaluation Method		
CLO	**Teaching Method**	**Assessment Method**
CLO1	Lecture, Case Studies, Multimedia Presentation	Quizzes, Assignments, Written Exam
CLO2	Lecture, Demonstration, Hands-on Practice	Practical Exercises, Assignments, Quizzes
CLO3	Lecture, Group Discussion, Case Study Analysis	Written Reports, Problem-Solving Exercises, Midterm Exam
CLO4	Lecture, Simulation Exercises, Problem-Based Learning	Practical Exams, Assignments, Simulation Reports
CLO5	Lecture, Tutorials, Group Projects	Assignments, Case Study Analysis, Midterm Exam
CLO6	Lecture, Workshops, Role-Playing, Multimedia Presentations	Assignments, Observation, Practical Exercises
CLO7	Lecture, Case Studies, Hands-on Practical Exercises	Reports, Practical Exams, Assignments
CLO8	Scenario-Based Exercises, Simulation, Group Projects	Project Reports, Practical Exams, Case Study Analysis
CLO9	Lecture, Discussion, Role-Playing, Case Studies	Quizzes, Assignments, Participation Evaluation
CLO10	Simulation Exercises, Case Studies, Group Projects	Project Reports, Practical Exams, Assignments

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Preparation for lectures	-	-	-
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)	-	-	-
Research for Project(s)/Essay(s)	-	-	-
Project Writing	**2**	**5**	**10**
Group Work	**1**	**4**	**4**
In-class Discussion(s)	-	-	-
Quiz(es)	-	-	-
Preparation for Quiz(es)	-	-	-
Laboratory	**3**	**2**	**6**
Assignment(s)/Homework/Class Works	**2**	**3**	**6**
Individual Reading / Research	-	-	-
Lesson Planning	-	-	-
Materials Adaptation	-	-	-
Material Development	-	-	-
Draft Preparation	-	-	-
Drawing	-	-	-
Essay Writing	-	-	-
Tutorial(s)	-	-	-
Portfolio Preparation	-	-	-
Portfolio Presentation	-	-	-
Total Workload			**102**
ECTS Credit			**3**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	-	-
Laboratory	-	-
Application	3	15
Field Work	1	5
Special Course Internship (Work Placement)	-	-
Homework/Assignments	2	10
Providing reliability and motivation of the individual homework completion and Submission	-	-
Presentation/Jury	-	-
Project	2	10
Quiz	-	-
Midterms/Oral Exams	1	20
Final/Oral Exams	1	40
Total	**10**	**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: Standards of Watchkeeping II							
Code	**Year**	**Semester**	**Credit**	**ECTS**	**Course application, Hour/Week**		
					Theoretical	**Application**	**Laboratory**
WAT401	IV	Fall	2	4	1	2	0
Course type: Compulsory				**Prerequisite: x**		**Language:** English	
% Contribution to the Professional Fundamental Component				**Basic Sciences**	**Engineering Science**	**Engineering Design**	**General Education**
				-	-	-	100
Course Venue and Time				Wednesday 09.30-11.20			
Instructor information				**Cpt. Orhan Kamil Babaoğlu** Faculty of Maritime Studies Wednesday / 09:00 - 12:00 +90 (392) 650 26 00 / 4040 orhankamil.babaoglu@kyrenia.edu.tr www.kyrenia.edu.tr			

Course Description	This course provides an in-depth examination of the principles and practices of safe watchkeeping as required under international maritime conventions and professional standards. It emphasizes bridge organization, officer responsibilities, and the effective management of navigational, port, anchoring, and pilotage watches. Special attention is given to navigation planning, watch handover procedures, system monitoring, and operations in restricted or coastal waters. The course also introduces reporting requirements under ship reporting systems and vessel traffic services (VTS), as well as the fundamentals of Bridge Resource Management (BRM), including leadership, communication, situational awareness, and decision-making. In addition, students will gain practical knowledge of the International Regulations for Preventing Collisions at Sea (COLREGs) and the environmental protection measures necessary to ensure compliance with international conventions such as MARPOL. By combining theoretical knowledge with case studies and practical applications, the course equips students with the competencies needed to maintain safe navigation, protect the marine environment, and manage resources effectively on the bridge.
Course Aims and Objectives	The primary aim of this course is to provide students with the knowledge, skills, and professional competencies required to maintain safe and effective watchkeeping in compliance with international maritime standards and conventions. • Understand the principles of safe watchkeeping and apply them in different operational contexts, including sea, port, anchorage, and restricted waters. • Demonstrate proficiency in bridge organization, task allocation, and officer responsibilities to ensure the safety of navigation and vessel operations. • Develop effective voyage planning and documentation skills, including watch handover procedures and system monitoring. • Apply bridge resource management (BRM) principles to optimize communication, teamwork, leadership, and situational awareness on the bridge. • Comprehend and implement reporting requirements for ship reporting systems and vessel traffic services (VTS). • Interpret and apply the International Regulations for Preventing Collisions at Sea (COLREGs) in practical scenarios. • Recognize the importance of marine environmental protection and implement measures to ensure compliance with international environmental regulations. • Enhance decision-making abilities and preparedness for emergencies and unexpected situations during watchkeeping duties.
	LO1: Demonstrate safe watchkeeping practices in accordance with international conventions, codes, and best practices.

Course Learning Outcomes	**LO2:** Organize and manage bridge operations effectively, ensuring proper task distribution and officer responsibilities. **LO3:** Plan and execute voyages with appropriate documentation, including passage planning, watch handover, and system checks. **LO4:** Apply bridge resource management (BRM) principles by practicing effective communication, teamwork, leadership, and situational awareness. **LO5:** Perform accurate ship reporting in compliance with ship reporting systems (SRS) and vessel traffic services (VTS) requirements. **LO6:** Interpret and apply COLREGs to prevent collisions at sea and ensure the safety of navigation under varying conditions**.** **LO7:** Operate effectively in restricted waters, ports, and anchorage areas, considering navigational and environmental challenges. **LO8:** Integrate environmental protection measures into watchkeeping practices, ensuring compliance with international regulations. **LO9:** Assess risks and make sound decisions in normal and emergency situations during navigation and vessel operations. **LO10:** Demonstrate professional competence and readiness to undertake officer-level watchkeeping responsibilities on board vessels.

Content of the Course

Week	*Subject*
1	**Introduction to Safe Watchkeeping** • Overview of watchkeeping principles • Responsibilities of officers on the bridge
2	**Bridge Organization and Duties** • Bridge team structure and hierarchy • Delegation of tasks and duty assignments • Suitability of personnel for specific tasks
3	**Bridge Organization and Duties** • Bridge team structure and hierarchy • Delegation of tasks and duty assignments • Suitability of personnel for specific tasks
4	**Deck, Port, and Anchoring Watches** • Deck watch responsibilities • Port (harbor) watch procedures • Anchoring watch (including mooring operations)
5	**Pilotage and Navigation Watches** • Duties during pilotage • Navigation watch: planning, preparation, and documentation
6	**System Checks During Navigation** • Monitoring bridge systems and shipboard equipment • Ensuring operational readiness and safety
7	**Navigation in Restricted Waters** • Navigation in confined areas and near coastlines • Risk assessment and safety measures
8	**Port Entry Preparations** • Preparing for berthing and arrival procedures • Communication and coordination with port authorities
9	**Ship Reporting Systems** • Standard reporting requirements • Electronic and manual reporting methods
10	**Vessel Traffic Services (VTS) Compliance** • Reporting to VTS centers • Adherence to VTS instructions and regulations
11	**Vessel Traffic Services (VTS) Compliance**

	• Reporting to VTS centers • Adherence to VTS instructions and regulations
12	**Bridge Resource Management (BRM) Principles** • Allocation, assignment, and prioritization of resources • Effective communication strategies • Leadership and confirmation procedures
13	**Situational Awareness and Team Experience** • Maintaining situational awareness during watch • Incorporating team experience in decision-making • Preparedness for abnormal or emergency situations
14	**Collision Prevention at Sea** • COLREG 1972 overview and application • Navigational rules to prevent collisions
15	**Environmental Protection at Sea** • MARPOL and other environmental regulations • Pollution prevention measures and shipboard compliance

Methods and Techniques used in the Course

Lectures and Presentations: Delivery of theoretical knowledge on international conventions, watchkeeping standards, and navigational rules.

Case Studies and Scenario Analysis: Examination of real-life maritime incidents and best practices to reinforce decision-making skills.

Bridge Simulator Training: Practical exercises on navigation, watchkeeping, and collision avoidance using full-mission bridge simulators.

Role-Playing and Group Exercises: Simulation of bridge team operations to practice communication, leadership, and bridge resource management.

Problem-Solving Sessions: Application of navigational rules (COLREGs) and voyage planning in complex operational situations.

Demonstrations and Hands-On Practice: Familiarization with watchkeeping tools, navigational equipment, and reporting systems.

Assignments and Projects: Preparation of voyage plans, passage documentation, and environmental protection plans.

Discussions and Interactive Participation: Encouragement of critical thinking and collaborative learning through classroom debates and Q&A sessions.

Simulated Emergency Drills: Training on emergency watchkeeping, distress communication, and rapid decision-making.

Independent Study and Reading: Engagement with textbooks, IMO model courses, and relevant maritime regulations for self-learning.

Sample Questions

Short Answer / Definition Questions

- Define the main responsibilities of an Officer of the Watch (OOW) during a navigational watch.
- Explain the differences between a sea watch, port watch, and anchor watch.
- What are the key principles of Bridge Resource Management (BRM)?
- List the documents required for voyage planning and their purpose.
- **Multiple Choice Questions**
- Which of the following is the correct procedure during a watch handover?
  a) Hand over without briefing if conditions are calm
  b) Provide a detailed report on the vessel's position, course, speed, and traffic situation
  c) Only transfer the logbook
  d) Wait for the Captain to supervise the handover
- The COLREGs require vessels to take early and substantial action to avoid collision. This principle is known as:
  a) Close-quarters situation
  b) Good seamanship
  c) Action to avoid collision
  d) Safe speed
- **Scenario-Based Questions**

  While navigating in restricted visibility, you hear the fog signal of another vessel forward of your beam. What immediate actions should you take as OOW according to COLREGs?

  During a coastal passage, the vessel is approaching a Traffic Separation Scheme (TSS). As the OOW, describe the steps you would follow to ensure safe and compliant navigation.

  During your watch on the bridge, you notice that a junior officer is hesitant to report a potential risk of collision. How would you apply Bridge Resource Management principles in this situation?

  Essay / Problem-Solving Questions

- Discuss the importance of situational awareness during navigation and describe methods to maintain it effectively.
- Evaluate how environmental protection responsibilities are integrated into watchkeeping duties and give practical examples.
- Prepare a sample voyage plan outline for a short coastal voyage, highlighting the critical elements.

Materials Used in the Course

Core International Conventions and Regulations:

- A.J. Swift, Bridge Team Management, the Nautical Institute, 2nd Ed., 2004
- *International Regulations for Preventing Collisions at Sea (COLREGs, 1972)*
- *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW, 1978, as amended)*
- *International Convention for the Safety of Life at Sea (SOLAS, 1974, as amended)*
- *International Convention for the Prevention of Pollution from Ships (MARPOL, 1973/78)*

Course Textbooks and References:

- Cockcroft, A. N., & Lameijer, J. N. F. *A Guide to the Collision Avoidance Rules.*
- Horck, J. *Bridge Resource Management for the Officer of the Watch.*
- Kemp, J. F. *The Navigation Control and Watchkeeping Handbook.*
- Selected IMO model courses and guidelines on watchkeeping and bridge resource management.

Supplementary Resources:

- Case studies of maritime accidents and investigation reports.
- National and institutional maritime regulations relevant to watchkeeping and safety.
- Charts, voyage planning documents, and reporting system manuals.

Practical Tools and Equipment:

- Bridge simulator systems for navigation and watchkeeping practice.
- Passage planning and electronic navigation tools (ECDIS, radar, AIS).
- Watchkeeping checklists, reporting forms, and logbooks.

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										
	LO1	**LO2**	**LO3**	**LO4**	**LO5**	**LO6**	**LO7**	**LO8**	**LO9**	**L10**
PO1	3	3	2	2	3	2	1	2	2	NA
PO2	1	1	2	2	1	2	1	2	3	NA
PO3	2	2	2	1	2	2	3	3	2	NA
PO4	1	1	1	1	2	3	3	1	1	NA
PO5	3	1	3	2	2	2	2	2	3	NA
PO6	2	2	2	2	3	2	3	2	2	NA
PO7	1	1	1	1	1	1	1	1	1	NA
PO8	1	1	1	1	0	1	1	1	1	NA
PO9	1	1	1	1	1	1	1	1	0	NA
PO10	1	1	2	3	3	2	1	1	1	NA
PO11	1	1	1	1	1	1	1	1	1	NA
PO12	1	1	1	1	1	1	1	1	1	NA

Course Learning Outcomes/ Evaluation Method		
Course Learning Outcomes (CLOs)	**Teaching Method**	**Assessment Method**
LO1	Lecture, Question-Answer	Midterm Exam, Final Exam
LO2	Lecture, Homework,	Midterm Exam, Final exam
LO3	Lecture, Question-Answer	Midterm Exam, Final exam
LO4	Lecture,	Midterm Exam, Final Exam
LO5	Lecture,	Quizzes, Midterm Exam, Final Exam
LO6	Lecture, Question-Answer	Midterm Exam, Final Exam
LO7	Lecture, Q&A	Midterm Exam, Final Exam
LO8	Lecture, Q&A	Midterm Exam, Final Exam
LO9	Lecture, Hands-on Practice	Midterm Exam, Final Exam
LO10	Lecture, Question-Answer	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**	**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)	**2**	**15**	**15**
Preparation for Quiz(es)	**-**	**-**	**-**
Laboratory	**-**	**-**	**-**
Assignment(s)/Homework/Class Works	**2**	**15**	**15**
Micro-Teaching Sessions	**-**	**-**	**-**
Lesson Planning	**-**	**-**	**-**
Materials Adaptation	**-**	**-**	**-**
Material Development	**-**	**-**	**-**
Draft Preparation	**-**	**-**	**-**
Drawing	**-**	**-**	**-**
Essay Writing	**-**	**-**	**-**
Tutorial(s)	**-**	**-**	**-**
Portfolio Preparation	**-**	**-**	**-**
Portfolio Presentation	**-**	**-**	**-**
Total Workload			**129**
ECTS Credit			**4**

Evaluation System		
Semester Requirements	**Number**	**Percentage of Grade**
Attendance/Participation	15	10
Laboratory	-	-
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	-	-
Quiz	1	10
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.		