Maritime Vocational School / Ship Machinery
About The Program
The Ship Machinery Associate Degree Program is a practice-oriented educational program designed in line with national and international maritime standards to train qualified technical personnel required by the maritime industry. The program adopts a holistic approach to delivering the knowledge and skills related to the operation, maintenance, and management of marine machinery systems, emphasizing technical competence, operational awareness, and professional responsibility. Throughout the education process, students acquire both theoretical knowledge and practical skills in main and auxiliary marine engines, energy and propulsion systems, machinery maintenance and troubleshooting techniques, maritime safety, environmental protection practices, ship organization, and maritime legislation. The program aims to educate graduates with strong technical capabilities who can serve both at sea and ashore and who possess the competencies required of a marine engine watchkeeping officer. In addition, the program places particular emphasis on professional competencies within the framework of the STCW Convention, occupational health and safety, ethical responsibility, leadership, teamwork, problem-solving, and emergency response skills. Graduates are equipped as qualified intermediate-level professionals capable of conducting marine machinery operations effectively and safely, demonstrating environmental awareness, adapting to technological developments, and assuming professional responsibilities within the maritime sector.
Profile of the Program
The Ship Machinery Associate Degree Program offers a comprehensive maritime engineering education encompassing main and auxiliary ship machinery, marine energy systems, maintenance and operation processes, maritime safety, and environmental protection. In line with international maritime standards and STCW requirements, the program provides a holistic engineering formation that focuses on safe machinery operation, energy efficiency, environmental sustainability, and operational effectiveness. Within the scope of the program, students gain competence in shipboard technical applications such as marine machinery operation, fault diagnosis and maintenance planning, automation and control systems, and fuel and energy management, while also having the opportunity to develop expertise in shore-based processes, including ship management, technical management, quality systems, safety management, and environmental management systems. In this respect, the program aims to educate qualified marine machinery operation engineers who are capable of serving both at sea and ashore, adaptable to technological advancements, and committed to a sustainable maritime perspective.

Qualification Awarded
Ship Machinery, Associate Degree
Length of Programme and Number of Credits
2 years (excluding one year of English Preparatory Program), 2 semesters per year, 15 weeks per semester, 120 ECTS credits
Level of Qualification
Associate Degree; YÖK National Qualifications Framework (TYYÇ), Level 5
Specific Admission Requirements
The admission of Turkish citizens to higher education is based on a nationwide Student Selection Examination (ÖSYM) organized by the Turkish Higher Education Council (YÖK). The admission of citizens of the Turkish Republic of Northern Cyprus is based on the Near East University Entrance and Placement Examination organized for TRNC citizens. The admission of foreign students is based on their high school diploma. A document proving English language proficiency is also required.
Recognition of Credit Mobility and Prior Learning
The transfer and recognition of courses taken outside University of Kyrenia are carried out in accordance with the principles set forth in the relevant Regulations, based on the decision of the respective Faculty or Institute Board of Directors. If the content of the courses taken at another higher education institution is found to be compatible with the content of the courses offered at University of Kyrenia and is deemed appropriate by the relevant Faculty or Institute Board, students may be granted exemption from these courses.
Qualification and Graduation Requirements and Regulations
Students of the Ship Machinery program are required to achieve at least the minimum passing grade in all courses and to obtain a minimum cumulative grade point average of 2.00 out of 4.00. The certificates and competencies awarded within the Ship Machinery program are fully compliant with the Training, Certification and Watchkeeping (STCW) standards established by the Republic of Türkiye Ministry of Transport and Infrastructure and the International Maritime Organization (IMO). The Ship Machinery program is subject to supervision and auditing by the Republic of Türkiye Ministry of Transport and Infrastructure, Directorate General of Maritime Affairs, the Council of Higher Education of Türkiye (YÖK), and the Higher Education Planning, Evaluation, Accreditation and Coordination Council of the Turkish Republic of Northern Cyprus (YÖDAK). In addition, the program has obtained accreditation and membership from the International Association of Maritime Universities (IAMU).

Programme Learning Outcomes	
1	Demonstrate comprehensive knowledge of maritime principles, systems, and machinery operation in compliance with IMO and STCW standards, and effectively apply this knowledge to ensure safe, efficient, and sustainable ship performance.

2	Apply advanced engineering design principles to develop, adapt, and optimize mechanical, electrical, and control systems in shipboard and shore-based industrial environments, integrating safety, cost-effectiveness, and environmental considerations.
3	Perform engineering watchkeeping duties and operational management with professional responsibility and situational awareness in accordance with international maritime conventions and best practices.
4	Identify, formulate, and analyze complex technical problems in maritime and related engineering fields by employing appropriate theoretical, computational, and experimental methods, and produce data-driven and reliable solutions.
5	Promote sustainable operations in compliance with IMO conventions such as MARPOL and SOLAS by integrating safety culture, risk assessment, and environmental protection principles into all technical practices.
6	Utilize advanced digital tools, diagnostic systems, and automation technologies for monitoring, control, and performance evaluation of maritime and industrial systems in line with the requirements of the evolving digitalization era in maritime operations.
7	Demonstrate competence in planning, executing, and managing technical projects, including resource allocation, budgeting, and maintenance planning, while ensuring quality assurance, safety, and regulatory compliance.
8	Operate effectively as both a leader and a team member in multidisciplinary and multicultural teams by promoting ethical conduct, collaboration, and effective communication in dynamic and often high-stress maritime environments.
9	Communicate clearly, professionally, and with technical accuracy in both written and spoken form in English and other relevant languages within maritime and industrial contexts.
10	Demonstrate accountability, integrity, and a commitment to continuous professional development and lifelong learning in accordance with the ethical and professional standards of maritime professions.
11	Evaluate and implement sustainable engineering practices and emerging green technologies to minimize the environmental impact of maritime and industrial operations.
12	Exhibit flexibility and an interdisciplinary perspective by transferring Ship Machinery knowledge and skills to different sectors and actively contribute to innovation and technological development beyond the maritime industry.
Program Educational Objectives	
1	To educate Ship Machinery graduates who are proficient in international maritime standards (IMO, STCW) and capable of effectively fulfilling professional duties and responsibilities in the areas of main and auxiliary ship machinery, energy and automation systems, and engine room safety.
2	To train specialists who can plan, manage, and optimize ship machinery operations, maintenance and repair activities, energy management, and technical operations both onboard and ashore, and who can effectively utilize modern and digital engineering applications by adapting to technological advancements.

3	To develop technically competent professionals with a high level of safety and environmental awareness who can integrate principles of sustainability, environmental protection, energy efficiency, and green ship technologies into engineering practices and managerial decision-making within the maritime field.
4	To cultivate professionals who can communicate effectively in multidisciplinary and multicultural working environments within global maritime and related industries, possess strong leadership and problem-solving skills, uphold ethical responsibility, and embrace lifelong learning.

Program Curriculum Map

M: Master / D: Develop / I: Introduce / N: None

Curriculum Courses			**Key Learning Outcomes**											
Level of Course Unit Semester	**Course Code**	**Course Name**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1/1	MTH101	Calculus I	I	N	N	I	N	N	N	N	I	N	N	I
1/1	MED101	Workshop I	N	I	I	N	I	N	D	N	I	N	I	I
1/1	SAF101	Maritime Safety I	I	I	I	N	I	I	I	I	N	I	I	I
1/1	MPH101	Physics for Mariners I	I	I	D	N	I	I	I	D	N	I	D	I
1/1	CFM101	Chemistry for Mariners	N	I	N	I	N	N	I	N	I	N	N	I
1/1	MRE101	General Aspects of Marine Engineering	I	N	N	I	N	N	N	N	I	N	N	I
1/1	TUR101	Turkish I: Written Expression	I	N	I	I	N	N	N	D	N	N	D	I
1/1	AIT101	Ataturk's Principles and History of Turkish Revolution I	D	I	I	I	I	I	I	I	I	N	I	D
1/1	ENG101	English I	N	N	N	N	I	I	N	N	I	D	I	I
1/1	SEA101	Seamanship I	I	I	M	N	I	I	I	D	N	I	D	I
1/1	MEC101	Technical Drawing I	N	N	N	N	I	N	N	N	I	D	I	I
1/2	MTH102	Calculus II	I	N	N	D	N	N	N	N	I	N	N	I
1/2	MED102	Workshop II	N	D	I	N	I	N	D	N	I	N	I	I
1/2	MED104	Maritime English I	N	N	N	N	I	I	N	N	I	D	I	I
1/2	SAF102	Maritime Safety II	I	I	M	N	I	I	I	D	N	I	D	I
1/2	MPH102	Physics for Mariners II	D	N	N	D	N	N	N	N	I	N	N	I
1/2	MED106	Marine Diesel Engines I	D	D	I	I	N	N	D	I	I	N	I	D

1/2	TUR102	Turkish II: Verbal Expression	N	N	N	N	I	N	N	N	I	D	I	I
1/2	AIT102	Ataturk's Principles and History of Turkish Revolution II	D	D	I	I	N	N	D	I	I	N	I	D
1/2	ENG102	English II	D	D	D	I	I	N	D	I	I	N	D	D
1/2	MED108	Marine Auxiliary Machinery I	N	N	N	N	N	N	N	N	I	D	I	I
1/2	CMP102	Introduction to Information Technologies	N	I	N	I	N	N	I	N	D	I	N	D
2/3	MEC205	Material Science	D	N	N	D	N	N	N	N	I	N	N	I
2/3	MEC207	Thermodynamics	D	N	N	D	N	N	N	N	I	N	N	D
2/3	SAF201	Maritime Safety III	D	D	I	D	I	N	N	I	I	N	I	D
2/3	MED205	Marine Diesel Engines II	D	D	I	D	I	N	I	I	I	N	I	D
2/3	MED203	Marine Engines Simulator	D	D	I	D	N	N	N	N	I	N	N	D
2/3	MED209	Marine Electrotechnology	I	I	M	N	I	I	I	D	N	I	D	I
2/3	MED207	Hydraulic, Pneumatic and Automatic Control	D	D	D	I	I	N	D	I	I	N	D	D
2/3	MED211	Theory of Marine Steam Engines and Boilers	N	N	N	N	N	N	N	N	I	D	I	I
2/3	MED201	Operations and Maintenance of Main and Auxiliary Machinery I	N	N	N	N	N	N	N	N	I	I	D	I
2/4	MEC204	Dynamics	D	D	I	D	N	N	N	N	I	N	N	D
2/4	NRC202	Ship Construction	I	I	M	N	I	I	I	D	N	I	D	I
2/4	SAF202	Maritime Safety IV	D	N	N	D	N	N	N	N	I	N	N	D
2/4	LAW202	Maritime Law and Conventions	D	D	I	D	I	N	N	I	I	N	N	D
2/4	MED206	Operations and Maintenance of Main and Auxiliary Machinery II	N	N	N	N	N	N	N	N	I	D	I	I
2/4	TSM202	Technical Ship Management	N	N	N	N	N	N	N	N	I	I	D	I
2/4	FMC202	First Aid and Medical Care	D	D	I	D	I	N	N	N	I	N	N	D

Curriculum Electives			**Key Learning Outcomes**											
Level of Course Unit Semester	**Course Code**	**Course Name**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
2/3	MEL201	Introduction to Marine Electronics	I	I	D	I	I	I	I	D	I	N	I	I
2/4	MEC202	Manufacturing Technology	D	D	D	D	I	I	I	I	D	D	I	N
2/4	MED202	Marine Auxiliary Machinery II	D	D	D	D	D	D	D	D	D	D	D	D

TQF-HE & Program Learning Outcomes Coverage			
Group		**TQF-HE Qualification**	**Program Learning Outcomes**
Knowledge	**Theoretical, Empirical**	Possess basic theoretical and practical knowledge supported by up-to-date textbooks, practical tools and equipment, and other learning resources in the field, building upon the competencies acquired at the secondary education level.	Use comprehensive knowledge of maritime principles, systems, and machinery operation.
Skills	**Cognitive, Applied**	Acquire the ability to apply the basic theoretical and practical knowledge gained in the field to a higher level of education in the same field or to a field at the same educational level.	Analyze, formulate, and produce data-based solutions to complex technical problems.
		Be able to interpret and evaluate data, identify and analyze problems, and develop evidence-based solution proposals by using the basic knowledge and skills acquired in the field.	Generate solutions to problems by using theoretical and experimental techniques.
Competencies	**Ability to Work Independently and Take Responsibility**	Be capable of independently carrying out a basic-level study related to the field.	Work effectively as a leader or a member in multidisciplinary and multicultural teams.
		Assume responsibility as a team member in solving complex and unforeseen problems encountered in field-related applications.	Work effectively in multidisciplinary and multicultural teams.
		Be able to carry out activities aimed at the development of individuals under one's responsibility within the framework of a project.	Transfer knowledge and skills to different sectors and engage in continuous learning.
Competencies	**Learning Proficiency**	Critically evaluate the basic knowledge and skills acquired in the field, identify learning needs, and take responsibility for meeting those needs.	Process databases by using digital and automation technologies.

		Be able to direct one's education toward a higher level of study in the same field or toward a profession at the same level.	Pursue continuous professional development and learning in accordance with ethical and professional standards.
		Demonstrate awareness and commitment to lifelong learning.	Be effective in the practical application of maritime principles and systems.
Competencies	**Communication and Social Skills**	Be able to communicate ideas related to the field at the level of basic knowledge and skills through written and oral communication.	Use technologies appropriate to the requirements of the digitalization era.
		Be able to share ideas related to the field and solution proposals for problems with both specialist and non-specialist audiences.	Communicate technically and professionally in English and other languages.
		Be able to use a foreign language at a minimum of the European Language Portfolio A2 General Level to follow developments in the field and communicate with colleagues.	Apply technical drawing in design and system analysis.
		Be able to use information and communication technologies together with computer software at least at the European Computer Driving Licence (ECDL) Basic Level required by the field.	Engage in continuous learning to apply knowledge and skills in different sectors.
Competencies	**Field-Specific Expertise**	Demonstrate awareness of social, scientific, cultural, and ethical values in the processes of collecting, applying, and disseminating field-related data.	Demonstrate compliance with professional and ethical standards.
		Possess sufficient awareness of universal social rights, social justice, quality, cultural values, environmental protection, and occupational health and safety.	Pursue continuous professional development and learning in accordance with ethical and professional standards.

TAY	Program Learning Outcomes											
TAY \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	✓											
2				✓								
3				✓								
4		✓										
5						✓						
6				✓								
7								✓				
8												✓
9						✓						
10										✓		
11	✓											
12				✓								
13		✓										
14						✓						
15								✓				

Institutional Learning Outcome / Program Learning Outcome Coverage													
R = Relevant PR = Partly Relevant NR = Not Relevant													
Institutional Learning Outcome		**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
1	They will be able to analyze, synthesize, and evaluate information and ideas from different perspectives.	R	PR	PR	R	R	PR	PR	PR	PR	PR	PR	PR
2	They will be able to perform their duties within the framework of multidimensional quality standards without disregarding ethical rules.	PR	PR	R	NR	PR	R	R	R	PR	NR	R	NR
3	By being aware of different cultures and global and historical perspectives, they can serve society through consistent and responsible behavior.	PR	NR	R	PR	R	R	PR	R	PR	PR	R	PR
4	By bringing together the concepts and knowledge they will acquire from numerous scientific disciplines, they will be able to access different fields of knowledge, compare them, and critique them.	R	PR	PR	R	PR	PR	PR	PR	PR	PR	PR	R
5	They will be able to demonstrate expertise in a specialized field of work and combine theory with practice.	R	R	PR	R	PR	PR	R	PR	R	NR	PR	PR

Occupational Profiles of Graduates
Graduates take the Engineer Officer (Machinery Officer) competency examinations at the Seafarers' Examination Center (Gemi Adamları Sınav Merkezi – GASM). Candidates who successfully pass these examinations are entitled to receive the "Officer in Charge of an Engineering Watch (OICEW)" Certificate of Competency, issued in accordance with the STCW A-III/1 standard established by the International Maritime Organization (IMO). With this certificate, graduates are eligible to work as Second and Third Engineer Officers on commercial vessels. After completing the required sea service period, Engineer Officers may upgrade their seafarer competencies and advance to the position of Chief Engineer. Graduates of the department may also pursue shore-based careers within maritime companies, undertaking roles such as general management, operations management, technical management, machinery inspection, and personnel management.
Access to Further Studies
May apply to undergraduate degree programmes.

Ship Machinery
Associate Degree Program Graduate Statistics (Last Five Years)

Year	Number of Graduates
2020	5
2021	9
2022	12
2023	5
2024	5

Course Structure Diagram with Credits					
I. Class / I. Semester					
Course Code	**Course Name**	**Core Elective**	**Theory**	**Practice**	**ECTS**
MTH101	Analiz I	Core	4	0	4
MED101	Atölye I	Core	1	2	3
SAF101	Denizde Güvenlik I	Core	2	2	3
MPH101	Denizciler için Fizik I	Core	3	2	3
CFM101	Deniz Kimyası	Core	2	2	3
MRE101	Gemi Makineleri Mühendisliğinin Temelleri	Core	2	0	3
TUR101	Türkçe I: Yazılı Anlatım	Core	2	0	2
AIT101	Atatürk İlkeleri ve İnkılapları Tarihi I	Core	2	0	2
ENG101	İngilizce I	Core	3	0	3
SEA101	Gemicilik I	Core	2	2	3
MEC101	Teknik Çizim I	Core	2	2	3
Total ECTS					**32**
I. Class / II. Semester					
Course Code	**Course Name**	**Core Elective**	**Theory**	**Practice**	**ECTS**
MTH102	Calculus II	Core	4	0	4
MED102	Workshop II	Core	1	2	3
MED104	Maritime English I	Core	2	0	3
SAF102	Maritime Safety II	Core	2	2	3
MPH102	Physics for Mariners II	Core	3	2	3
MED106	Marine Diesel Engines I	Core	2	2	4
TUR102	Turkish II: Verbal Expression	Core	2	0	2
AIT102	Ataturk's Principles and History of Turkish Revolution II	Core	2	0	2
ENG102	English II	Core	3	0	3
MED108	Marine Auxiliary Machinery I	Core	2	2	3
CMP102	Introduction to Information Technologies	Core	3	0	3

Total ECTS					**33**
II. Class / III. Semester					
Course Code	**Course Name**	**Core Elective**	**Theory**	**Practice**	**ECTS**
MEC205	Material Science	Core	3	0	3
MEC207	Thermodynamics	Core	3	0	3
SAF201	Maritime Safety III	Core	2	2	3
MED205	Marine Diesel Engines II	Core	2	2	3
MED203	Marine Engines Simulator	Core	1	2	3
MED209	Marine Electrotechnology	Core	1	2	3
MED207	Hydraulic, Pneumatic and Automatic Control	Core	1	2	3
MED211	Theory of Marine Steam Engines and Boilers	Core	3	0	3
MED201	Operations and Maintenance of Main and Auxiliary Machinery I	Core	2	2	3
TE**	Technical Elective	Core	2	2	3
Total ECTS					**30**
II. Class / IV. Semester					
Course Code	**Course Name**	**Core Elective**	**Theory**	**Practice**	**ECTS**
MEC204	Dynamics	Core	3	0	3
NRC202	Ship Construction	Core	3	0	3
SAF202	Maritime Safety IV	Core	2	2	3
LAW202	Maritime Law and Conventions	Core	4	0	3
MED206	Operations and Maintenance of Main and Auxiliary Machinery II	Core	2	2	4
TSM202	Technical Ship Management	Core	2	2	3
FMC202	First Aid and Medical Care	Core	2	2	3
TE**	Technical Elective	Elective	2	2	3
Total ECTS					**25**
Total ECTS					**120**

Examination Regulations, Assessment and Grading		
Grade	**Coefficient**	**Percentage**
AA	4	90-100
BA	3.5	85-89
BB	3	80-84
CB	2.5	75-79
CC	2	70-74
DC	1.5	60-69
DD	1	50-59
FF	0	49 and below
NA	-	Participation rate is below 70%

Mode of Study	
Full Time	
Field(s) of Study	
Ship Machinery	
Head of Program and ECTS Coordinator	
Head of Program	Oceangoing Marine Chief Engineer Volkan Varışlı
ECTS Coordinator	Dr. Gökhan Tarı