UNIVERSITY OF KYRENIA

DEPARTMENT OF MARINE ENGINEERING

Course Catalogue

Contents

This course catalogue is developed to give information about the Marine Engineering programme in Faculty of Maritime Studies, University of Kyrenia.

The catalogue includes key information about the duration of the programme, mode of study, course description, credit and grading system etc. of the programme.

We hope you can find the necessary information to your questions about the Department of Marine Engineering and the course programme.

Sincerely,

Associate Prof. Dr. Mehmet Fatih Hüseyinoğlu

Acting Dean of the Maritime Studies

1. **MARINE ENGINEERING (CE) Programme**

2. **General Information about the Department of Marine Engineering**

The Faculty of Maritime Studies of Near East University founded in 1996 and since then it offers maritime education and training with teaching staff specialized in marine-oriented programs at the undergraduate levels.

Near East University Faculty of Maritime Studies is continuing to facilitate education under the body of University of Kyrenia since 2014.

Vision of the Programme

To develop the strategies and methods in the advancement of maritime education: and to become an interdisciplinary and dynamics scientific center of excellence which can be adopt itself in line with the changing conditions as port of a premier research faculty.

Mission of the Programme

The mission of the Department of Marine Engineering is to train highly qualified marine engineers, who are equipped with adequate knowledge, skills and hands-on experience required for maintaining, operating and repairing propulsion engines and support systems, auxiliary engines, generators, pumps, boilers and other machinery all of which are necessary to ensure the safe navigation of the ship. To this end, the Department of Marine Engineering offers a variety of courses in a broad spectrum in the line with the criteria set by the International Maritime Organization. Curriculum covers fields as defined in IMO STCW 95 and 2010 amendments A-III/1 and A-III/2. The four year undergraduate degree program is designed to address to the requirements of all aspects of the training on engineering. Throughout the four year undergraduate program, the students receive courses on basic engineering, shipbuilding & marine engineering, electrical engineering, control engineering and other related issues.

Official Length of Programme:

4 years (excluding one year of English preparatory class),2 semesters per year, 16 weeks per semester.

3. **Mode of study:** full time

Profile of the Programme and Method of Education

Marine Engineers with their qualifications that they acquired throughout 4 year undergraduate education on marine engineering are preferred by companies involved in maritime industry. To this end, the undergraduate program offered by the Department of Marine Engineering is academically very rigorous and covers all aspects of training on marine engineering. The academic staff consisting of the most experienced professionals spares no sacrifices and exerts great effort devotedly to cultivate highly qualified and first caliber marine engineers who are highly equipped to involve in the design, operation of shipboard electrical and environmental systems as well as propulsion plants and support systems. Marine engineering is a rapidly growing career field with immense job opportunities. Along with highly qualified staff, its compliance with standards as amended in IMO SCTW 95 and 2010 amendments and TEAL training & research ship are the strengths of the Department of Marine Engineering undergraduate program.

4. Qualification Awarded

Bachelors of Science (B.Sc.) (Bachelor's Degree/ first cycle in Bologna System)

5. Level of Qualification

Qualifications Framework- European Higher Education Area (QF-EHEA): 1

6. Access Requirement(s)

High School Diploma. Admission of Turkish nationals is by Placement through anation-wide Student Selection Examination (ÖSS) administered by Assessment,Selection and Placement Centre (ÖSYM). Admissions of Turkish Cypriots is based on the University of Kyrenia Entrance and Placement exam. Admission of international students is based on their high school credentials. Proof of English Language proficiency is also required.

7. Qualification Requirements

150University of Kyrenia Credits (University of Kyrenia Credit is contact hour based) which is total 240 ECTS credits must be completed after being successful in the courses to become a graduate of the MARINE Engineering department.

ECTS is a credit system designed to make it easier for students to move between different countries. Since they are based on the learning achievements and workload of a course, a student can transfer their ECTS credits from one university to another so they are added up to contribute to an individual's degree programme or training. ECTS helps to make learning

more student-centred. It is a central tool in the Bologna Process, which aims to make national systems more compatible.

ECTS also helps with the planning, delivery and evaluation of study programmes, and makes them more transparent

8. Intended Learning Outcomes of B.Sc. Program

The objective of the Marine Engineering Undergraduate Program is mainly establishing an efficient interaction between the academic staff and the students in order to convey the academic knowledge and professional experience to our students, providing them the ability and insight to use the required analytical skills to solve engineering problems by making fast and efficient decisions through good use of resources with an absolute respect to ethics.

The Marine Engineering Undergraduate Program also aims to train high-qualified Marine engineers whose talents, skills, abilities and knowledge meet the requirements and needs of the state and private institutions, and support development as well as contributing advancements in the Marine engineering field, and carry out research facilities to bring new insight into the academic bases of this field.

9. Arrangements for Transfer from another Marine Engineering Department

A student wishing a transfer from another university: the student must prove her/his English Proficiency if he/she wishes to attend the English Section. At the time of OSS examination the candidate's entrance score must not be less than the lowest score for admission to the Marine Engineering Department. The transcript and course content of the applicant is examined by the department and the student is then accepted into the appropriate year of the programme.

10. Examination Regulations, Assessment and Grading

The evaluation of the students' performance varies according to the methods of delivery followed in each course offered indifferent departments of the Faculty of Maritime Studies in University of Kyrenia. In addition to a final exam, which is requisite according to the regulations of NEU, the results of minimum one mid-term exam along with other evaluation criteria are usually taken into consideration in order to determine the final grade of the student. These supplementary performance evaluation criteria might be quiz grades, laboratory works, home works, term projects and presentations depending on each individual course. Weights of all abovementioned partial grades within the overall grade gained by the student at the end of the semester are defined by the lecturer delivering the course.

The content of the exams as well as the method of assessing students' knowledge are determined by the course lecturer. The exams are normally designed according to the intended learning objectives. The results of the mid terms are posted both on the web page as well on the bulletin board so that the objections can be considered if any corrections are needed for re-evaluation. The exams are graded over 100 points. The means and variances are also computed for the exams in order to see the distribution of percentages of the students which are under in classes. The exams may be completely closed (for the texts part) or/and may be open book depending on the course subject and the teachers consensus.

Exams can be "written"; either in the "multiple choice" or in the "essay writing" style for assessing conceptual knowledge. "Written" exams may also include problem solving or sometimes may include technical drawing practices for engineering purposes as well. Some "computer-aided" courses may have applied examinations that are organized in PC Labs while each student carries out the tasks given in the content of the exam, using an individual computer. Some other courses may have "oral" examinations; either in "interview" or in a "presentation" style. The lecturer of the course is in charge of setting the criteria for grading the written or oral examinations given for that course.

Students failing to attend to any mid-term or final exam with a valid excuse are allowed to take a "Make-up Exam". If the student fails the course at the end of the semester, he/she is given the chance to take an additional "Re-sit" exam; the grade of the re-sit exam replaces the grade of the final exam gained by the student while his/her average grade is re-calculated. No make-up exam is given in case of missing the re-sit exam.

The timetables of mid-term, final and re-sit examinations are announced by the Engineering Faculty, following the dates defined in academic calendar that is set by the Rectorate of University of Kyrenia. Other critical dates for possible additional midterm examinations, quizzes as well as any term project submission deadline are defined by the lecturer of each course.

Lecturers submit the student grades to the Chairperson until "The last day for the submission of letter grades" that is specified in the academic calendar. All grades become official when reported to the Registrar's Office by each Department.

Grades are entered into the information system belong to each student. The students are ranked according to their success and the scores. The high honor and the honor students are publicly announced and during the graduation ceremony, they are complemented and documented by the certificates.

11. Grading Scheme and Grades

PERCENTAGE	COURSE GRADE	GRADE POINTS
90-100	AA	4.00 (Excellent)
85-89	BA	3,30-3,95 (Excellent)
80-84	BB	3,00-3,45 (Very Good)
75-79	CB	2,50-2,95 (Very Good)
70-74	CC	2,00-2,45 (Good)
65-69	DC	1,50-1,90 (Good)
60-64	DD	1,00-1,40 (Good)
50-59	FD	0,50-0,90 (Failed)
0-49	FF	0,00 (Failed)

12. Occupational Profiles of Graduates

It's one of the rare fields with far possibility of staying unemployed. Students who graduated from our department have the opportunity to work in various positions ranging from fourth engineer to chief engineer respectively. Furthermore, they can work as engineers and take responsibilities in various factories, shipyards, hotels, workshops and all technical fields. Besides, they can take technical responsibilities in shipbuilding related companies and centers.

Programme Director
Associate Prof. Dr. Mehmet Fatih Hüseyinoğlu
Phone: 00 90 650 2600- 4070
E-mail: mehmetfatih.huseyinoglu@kyrenia.edu.tr

13. Key Learning Outcomes

The studentswho successfullycomplete the program should have;

- Know and properly use the language of chemistry (nomenclature, terminology, and symbolic representations)
- Comprehend and be able to apply chemical facts, concepts, and models, and be able to
- Succeed in qualitative and quantitative problem solving skills.
- Think critically about the mutual impacts of science, society, natural resources, and the environment.
- Apply the definition of limit to evaluate limits by multiple methods and use it to derive the definition and rules for differentiation and integration.
- Use derivatives to analyze and graph algebraic and transcendental functions.
- Select and apply appropriate models and differentiation techniques to solve problems involving algebraic and transcendental functions; these problems will include but are not limited to applications involving optimization and related rates.
- Apply the definition of indefinite integral to solve basic differential equations.
- Apply the definition of definite integral to evaluate basic integrals.

- Use the fundamental theorem of calculus to evaluate integrals involving algebraic and transcendental functions.
- Students will learn marine diesel engine andauxiliary engines
- Students will be introduced the parts of each engine
- Students are going to be given general knowledge about dynamics and statics.
- The basic concepts of hydrostatics and hydrodynamics are going to be stated
- The study of Harmonic motion will be take place.
- Students will gain the skills of application of theory by performing experiments in physics lab.
- Learn about the techniques of survival at sea.
- Learn use of survival craft (life boat, rescue boat) and equipment.
- Learn basic (elementary and medical) first aid techniques.
- Learn personal safety and social responsibilities.
- Learn prevention of marine pollution by ships.
- Learn to use basic tools.
- Learn fundamental of welding and soldering.
- Learning the safety rules.
- Students will learn marine diesel engine and auxiliary engines and function
- Students will be introduced the parts of each engine
- Determine convergence, divergence, absolute convergence on a given series.
- Realize the power series, applications of Taylor,Maclaurin, and Binomial series.
- Undertake mathematical operations on double and triple derivatives/integrals
- Students will learn a basic knowledge of forces and moments on and between components of a structure with an emphasis on the fundamental steps (e.g., setup, analysis, solution, discussion) of engineering problems.
- Students will also learn to analyze: forces and moments on a static rigid body, moments on/between mulMedicinele static rigid bodies and internal forces/moments in a static rigid body.

14. Objectives and Contents of the Course:

CHE 101 General Chemistry for Maritime Studies

Objectıves Of The Course:

This course is designed as a one-semester course for freshman maritime students.

Course content:

Atoms, molecules and ions, mass relations in chemistry; stoichiometry,reactions in aqueous solution,electrochemistry,gases,thermochemistry**,** and acids and bases.

MTH 101 Mathematics I

Objectıves Of The Course:

Conceptual overview of law and methods in marine engineering subjects - To understand the major theoretical background of functions, limits, derivatives and their application in engineering problems, integrals, techniques of integration and application of the integral.

Course content:

This course is designed to develop the topics of differential and integral calculus. Emphasis is placed on limits, continuity, derivatives and integrals of algebraic and transcendental functions of one variable. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to derivative-related problems with and without technology.

MRE 101 Introducttion to Marine Engineering

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course content:

The aim of ıntroduction to marine engineering is to gain basic knowledge about the ıntroduction to marine equipments, dealing with the operation and maintenance of parts of engines and boilers, steam turbines, gas turbines and systems.

MEC 205 Material Science

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course content:

The aim of material science is to teach the methods of production of cast iron, steel and non ferrous metals. Designation and classification of all metals the principle of metal casting. The plastic working of metals and its principles. Welding technics and principles. The heat treatment.

PHY 101 Physics I

Objectıves Of The Course:

Vectors, statics, dynamics, work, energy, power, momentum, rotational motion, harmonic motion, hydrostatics, hydro-dynamics, heat and temperature, heat transfer, wave motion and sound.

Course content:

The intention of this course is not only teaches to the fresh-person students theoretical topics that is given in “Objectives of the Course” part, but also the way of analytic opinion for solutions. On the other hand laboratory works give opportunity to the student to apply the theory.

Two-semester sequence in general physics is intended for pre-engineering studies, students who are planning to become a captain or mechanic. Topics include a survey of: vector methods, conservation laws, classical mechanics, gravitation, optics, sound, heat, electricity, magnetism and elementary quantum physics. Three hours lecture, two hours lab per week. Prerequisite: Skill in algebraic manipulation. Offered annually.

SAF101 Marine Safety I

Objectıves Of The Course:

Survival techniques at sea. Location and usage of personal life saving appliances. Basic (elementary and medical) first aid. Personal safety and social responsibilities.

MED 101 Workshop I

Objectıves Of The Course:

Improvement of abilities of using tools, giving the relevant information about tools using in ship workshops.

Course content:

The aim of workshop I is to teach safety protection, marking, usage of hand tools and measurement.

MED 106 Maritime English I

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course content:

The aim is to teach the students English who are at maritime schools and cadets. It takes the goal to build up necessary vocabulary on technical documentation related to machinery and assist in reading comprehension.

MTH 102 Mathematics II

Objectıves Of The Course:

Conceptual overview of theorems and methods within applied course material - Teaching Methods of Convergence and divergence - Teaching three dimensional vector analyses - Double, triple partial derivatives and integrals.

Course content:

This course is designed to develop the topics of series, parametric equations, vector and surfaces, vector valued functions, partial differentiation, mulMedicinele integrals and vector calculus. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to vector calculus, parametric equations and polar coordinates, mulMedicinele integrals problems with and without technology.

MEMEC 102 Engineering Mechanics

Objectıves Of The Course:

- Analyze static equilibrium for rigid bodies
- Model physical systems using free body diagrams
- Classify types of problems
- Solve for reaction forces and moments
- Determine equivalent force systems
- Calculate internal forces
- Calculate centroids and moments of inertia
- Determine the dry friction of objects

Course content:

The aim of static is an understanding of the theory and applications of basic engineering mechanics, including a review of vectors, the computation of resultant forces, the equations for equilibrium of particles and rigid bodies, calculation of centre of gravity and moment of inertia, structural analysis of trusses and dry friction.

MED 104 Diesel Engines I

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course Description:

The aim of ıntroduction to marine engineering is to gain basic knowledge about the ıntroduction to marine equipments, dealing with the operation and maintenance of parts of engines.

MPH 102 Physics II

Objectıves Of The Course:

Electricity; Electric field and potential capacitors and dielectrics. Current and resistance. DC circuits. Power transmission, maximum power theorem and power in mono and tree phase systems. Magnetic field, electric motors, transformers and generators. Electromagnetic wave, light and physical optics. Electromechanical instruments. AVO meter.

Course Description:

The intention of this course is teaching to the fresh-person students, theoretical topics that are given in “Objectives of the Course” part, but also the way of analytic opinion for solutions. On the other hand laboratory works give opportunity to the student to apply the theory.

Two-semester sequence in general physics is intended for pre-engineering studies, students who are planning to become a captain or mechanic. Topics include a survey of

Static electric, electric field, capacitance and dielectrics. Resistivity circuit and currents in AC and DC circuits. Power, power theorem for all circuits. Mono and three phase power. Magnetic field, electric motors, transformers and generators. Light and optics. Electromechanical instruments. Three hours lecture, one hours lab per week. Prerequisite: Skill in algebraic manipulation. Offered annually.

SAF102 Maritime Safety II

Objectıves Of The Course:

The objectives of this cours

1) To teach how to fight with the fire

2) To teach how to use fire fighting equipments.

3) To teach how to applying procedures of ISPS

Course Description:

SOLAS 1974 and amendments,rules and regulations of SOLAS.Conditions of fire,firepreventing,fire classes,different of fire fighting,fire fighting equipment,fixed and portablefire extinguishers,fireman outfit,breathing apparatus,hoses and nozzles,international shore connection.Maintenance and control of fire fighting equipment.Fire fighting plans.Security-Related Familirization(Güvenlik Tanıtımı),Security Awarness(Güvenlik Farkındalık),Designated Security Duties(BelirlenmişGüvenlik Görevleri)

MED 102 Workshop II

Objectıves Of The Course:

Improvement of abilities of using tools, giving the relevant information about tools using in ship workshops.

Course Description:

The aim of workshop I is to teach safety protection, marking, usage of hand tools and measurement.

CMP 152 Introduction to Computer

Objectıves Of The Course:

It includes system components, social impact, applications, programming concepts, and the use of software packages. Students will learn the basics through intermediate computer concepts with an emphasis on the personal computer and its practical use, including hardware, application and system software, the Internet and World Wide Web, communications, database management, and computers in society. This course will also provide full menu of application modules with core requirements for word processing.

Course Description:

This course is designed to give students an understanding of how a computer works its capabilities, limitations, and applications. This course is intended as a first computer course and it is not assumed that the student has background knowledge on the subject. The course

will focus on theoretical issues during the first period, followed by application and hands on skills.

MEL 201 Introduction to Electronics

Objectıves Of The Course:

semiconductors, diodes, diodes in circuits, transistors, transistors in circuits, transistor amplifier. Filed effect transistor. Feedback amplifiers and oscillators. Power amplifiers. Multi-vibrators. Counting digital Circuits, Modulation. Antennas and Propagation of electromagnetic waves.

Course Description:

The basic goal of this course is to introduce the some of electronic components as well as the characteristics of the components and the behavior in the circuit. Theoretical topics are given in “Objectives of the Course” part.

One-semester, Introduction to Electronics is intended to be offered for engineering studies; students who are planning to become a captain or mechanic. Topics include a survey of semiconductors, diodes, diodes in circuits, transistors, transistors in circuits, transistor amplifier. Filed effect transistor. Feedback amplifiers and oscillators. Power amplifiers. Multivibrators. Modulation. Antennas and Propagation of electromagnetic waves. Three hours lecture per week. Prerequisite: MD/MEPHY101 and MD/MEPHY 102. Offered annually.

MTH 112 Linear Algebra

Objectıves Of The Course:

The main aim of this course is to provide students with an introductory yet comprehensive overview of matrices, operations with matrices and their applications in solving linear systems. It also provides an opportunity to see basic concepts of linear algebra like linear spaces, linear transformations and some other related concepts as well as applications of earlier methods for solving linear systems to basis and dimension problems and kernel and image of linear transformations problems.

Course Description:

Systems of linear equations: elementary row operations, echelon forms, Gaussian elimination method; Matrices: elementary matrices, invertible matrices, symmetric matrices; Determinants: adjoint and inverse matrices, Cramer's rule. Vector spaces: linear independence, basis and dimension, Euclidean spaces. Linear mappings: matrix representations, changes of bases; Inner product spaces: Cauchy-Schwarz inequality, Gramm-Schmidt orthogonalization; Eigenvalues and eigenvectors: characteristic polynomials, Diagonalization.

MED 203 Marine Auxiliary Machinery I

Objectıves Of The Course:

- Learn the basic concepts of pumps, main aux. equipments
- Prepare the students for the training

Course Description:

The aim of Marine Auxiliary Machinery I is to gain basic knowledge about the different types of pumps used in main engine and loading and unloading operation. Also pipelines on ships, mooring winches, windlass, cranes, davits crane and steering gears will be distinguished.

MED 201 Operation and Maintenance of Main and Auxilary Machinery I

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course Description:

The aim of ıntroduction to marine engineering is to gain basic knowledge about the ıntroduction to marine equipments, dealing with the operation and maintenance of parts of engines.

NRC 201 Ship Construction

Objectıves Of The Course:

To help sailors improve their knowledge on ship construction principles and ship structure elements who will be the second captain or a captain on merchant ships in accordance with

STCW-78 convention 1995 revision.

Course Description:

In this course, sailors will learn general arrangement plan, holds, engine-room, peak tanks, double-bottom tanks, hatchways, bulk heats, cargo tanks, deck plating, frames, brackets, transverse frames, deck beams, shell plating, and etc.

MEC 207 Thermodynamics I

Objectıves Of The Course:

- Learn the basic concepts of thermodynamics (Pressure, temperature, close and open system, macroscobic and microscobic properties)
- Modelling of system
- Learn to estimate the thermodynamic properties from tables and relations.
- Learn to analyze energy transfer and transformation in systems using fundamentals of properties of matter, work , heat, internal energy, entalphy and relations derived by First Law of thermodynamics.
- Learn to carry out thermodynamic analysis of engineering devices and systems such as piston-cylinder device, compressors, turbines, pumps, heat exchangers.

Course Description:

The aim of thermodynamics I is to gain basic knowledge about the fundamental concepts of energy and energy transformations with focus on engineering utilization of thermodynamic principles. The system description is done and first law of thermodynamics are described in details. The application of first law of thermodynamics on different types of steady-state devices and cycles will be carries out.

MEC 204 Dynamics

Objectıves Of The Course:

Develop an understanding of particle and planar rigid body kinematics and kinetics. Obtain an understanding of Newton’s Laws of Motion, and the ability to apply energy and momentum methods to particles and rigid bodies in planar motion.

Course Description:

Kinematics and kinetics of particles; Newton's laws; energy and momentum methods; system of particles; kinematics and kinetics of planar motions of rigid bodies; plane motion of rigid bodies.

MED 301 Electrotechnology I

Objectıves Of The Course:

Direct current circuit analysis. Fundamental laws of electric circuit theory. Alternating current circuit analysis. Phasor representation. Three phase circuit. Active, reactive and apparent power. Power triangle. Systems comprising several loads

Course Description:

As all we know Electric Motors, Generators and Transformer are working on the base of electromagnetic and magnetic field. Since the sea persons will face such machines on the board, the functions of coil, capacitor and the resistance in the circuit should be known. The main purpose of this course is to give those information to the students. Theoretical topics are listed in "Objectives of the Course" section.

One-semester course, is intended for engineering studies, who are planning to become a marine mechanical engineer. Topics include a survey, Direct current circuit analysis. Fundamental laws of electric circuit theory. Alternating current circuit analysis. Phasor representation. Three phase circuit. Active, reactive and apparent power. Power triangle. Systems comprising several loads. Three hours lecture per week. Prerequisite: MD/MEPHY101 and MD/MEPHY 102. Offered annually.

MEC 306 Fluid Mechanics

Objectıves Of The Course:

Develop an understanding of fluid dynamics in aerospace engineering as well as a variety of other fields. Learn to use control volume analysis to develop basic equations and to solve problems. Understand and use differential equations to determine pressure and velocity variations in internal and external flows. Understand the concept of viscosity and where viscosity is important in real flows. Learn to use equations in combination with experimental

data to determine losses in flow systems. Learn to use dimensional analysis to design physical or numerical experiments and to apply dynamic similarity.

Course Description:

First course in fluid mechanics. Includes stress and strain rate descriptions, fluid statics, use of differential and finite control volume analysis with continuity, momentum, and energy equations, Bernoulli and Euler equations, vorticity, potential flow, incompressible viscous flow using Navier-Stokes equations, dimensional analysis, pipe flow, boundary layers, separation, introduction to turbulence.

MTH 301 Numerical Analysis for Engineers

Objectıves Of The Course:

We will use the stochastic neoclassical model as an organizing framework throughout the course. In the beginning we will use this model to to motivate the study of elementary numerical methods for differentiation, optimization, root-finding, approximation and integration. We will then to combine these elementary methods to analyze functional problems, in particular value function iteration on a discrete grid, finite elements methods, linear quadratic methods, Euler equation methods incl. projection methods and weighted residual 1 methods.

Course Description:

This is a course in the basic tools of numerical analysis that can be used to address analytically intractable problems economics. A large class of problems cannot be analyzed with analytical tools, and numerical methods are increasingly expanding the questions we can address. Numerical methods are vital to all types of applied economic research. The generality with which the techniques will be presented in this course will make them applicable to a wide range of fields, including macroeconomics, finance, econometrics, game theory, public finance, contract theory and others. In order to learn how to use computational tools in an informed and intelligent way, this course endeavors to explain not only when and how to use various numerical algorithms but also how and why they work; in other words, the course

opens up the “black boxes”and provide the students with a versatile toolbox for their own research. At the end of the course special attention will be paid to dynamic economic problems, including methods for solving models with heterogenous agents.

MED 202 Marine Auxiliary Machinery II

Objectıves Of The Course:

- Learn the basic concepts of pumps, main aux. equipments
- Prepare the students for the training

Course Description:

The aim of Marine Auxiliary Machinery II is to gain basic knowledge about the different types of pumps used in main engine and loading and unloading operation. Also pipelines on ships, mooring winches, windlass, cranes, davits crane and steering gears will be distinguished.

MED 403 Operation and Maintenance of Main and Auxilary Machinery II

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course Description:

The aim of ıntroduction to marine engineering is to gain basic knowledge about the ıntroduction to marine equipments, dealing with the operation and maintenance of parts of engines.

SAF 214 MARITIME SAFETY III

Objectıves Of The Course:

Life saving equipment. Abandoning in ship. Man overboard operations. Life at sea and hyphothermia. Life in life boats and rafts. Search and rescue, SAR organizations safety equipment certificate. Survival at sea. Fast rescue boat, training of passenger ships.

Course Description:

To learn operation procedure of navigation equipment in accordance with STCW regulation on board.

SWM 202 Swimming

Objectıves Of The Course:

To learn the students how they swim

Course Description:

In case of dangerous position, such as fire, go out of ship, the seafarers should leave the ship immediately therefore they have to know swimming. In this course the principles of swimming is learnt in a pool as application.

MTH 201 Thermodynamics II

Objectıves Of The Course:

- Learn the basic concepts of thermodynamics (Pressure, temperature, close and open system, macroscobic and microscobic properties)
- Modelling of system
- Learn to estimate the thermodynamic properties from tables and relations.
- Learn to analyze energy transfer and transformation in systems using fundamentals of properties of matter, work , heat, internal energy, entalphy and relations derived by first and second Law of thermodynamics.
- Learn to carry out thermodynamic analysis of engineering cycles and systems such as otto and diesel cycles

Course Description:

The aim of thermodynamics II is to gain basic knowledge about the gas and steam cycles. The system description is done and second law of thermodynamics are described in details. The application of first and second law of thermodynamics on different types of cycles will be carries out.

MED 303 Engine Similator

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course Description:

The aim of introduction to marine engineering is to gain basic knowledge about the introduction to marine equipments, dealing with the operation and maintenance of parts of engines.

MED 401 Marine Electrotechnology II

Objectıves Of The Course:

Electromagnetism, Electromagnetic induction, Electromagnetic wave difision, Principles of energy conservation, Transformers AC and DC, Generators AC and DC, DC and AC electric Motors, Three phase induction motors, Synchronous motors and generators,

Course Description:

The basic Electric machineries such as Motors, Generators and Transformer are working on the base of electromagnetic induction principle. Since the sea persons will face such machines on the board, the functions, operation, maintenance of machineries should be known. The main purpose of this course is to give theoretical and practical information about general utility of electricity.Theoretical topics are listed in “Objectives of the Course” section.

One-semester course is intended for engineering studies, who are planning to become a Marin mechanical engineer. Topics include a survey, Electromagnetism, Electromagnetic induction, Electromagnetic wave difision,Principles of energy conservation, Transformers AC and DC,Generators AC and DC, DC and AC electric Motors, Three phase induction motors, Synchronous motors and generators,

Three hours lecture per week. Prerequisite: MEETC 201 Offered annually.

MEC 301 Heat Transfer

Objectıves Of The Course:

1. Formulate basic equations for heat transfer problems.
2. Apply heat transfer principles to design and evaluate performance of thermal systems.
3. Calculate the effectiveness and rating of heat exchangers.
4. Calculate heat transfer by radiation between objects with simple geometries.
5. Calculate and evaluate the impact of boundary conditions on the solutions of heat transfer problems.
6. Evaluate the relative contributions of different modes of heat transfer

Course Description:

Introduction to the fundamental mechanisms of heat transfer; conduction, convection and radiation, and to problems where combinations of these modes occur. Applications to practical systems are stressed.Objectives are to provide understanding of the physical processes allowing heat transfer; development of analytical skills; and to increase the ability to handle realistic engineering problems. Some special topics will be treated as appropriate. At completion of the course, students should have an understanding of the physical processes governing heat transfer; be able to analyze and solve conduction, onvection, and radiation transfer problems by appropriate methods to determine temperature distributions and/or energy transfer rates for steady and transient conditions; and be able to analyze and design common heat transfer equipment and devices including extended surfaces and heat exchangers. These skills are highly valued in many industries, including automobile, microelectronics, HVAC, electrical power generation, and manufacturing.

LAW 351 Maritime Law & Int. Conv. I

Objectıves Of The Course:

1) to introduce some of the major issues within the description and importance ofIntroduction to marine engineering 2) to gain and understanding Main and auxiliary engines.

Course Description:

At the end of the second semester will be held for two months in summer ship to ship machines to students as a preparation for an internship provide basic information about.

MEC 303 Machine Design

Objectıves Of The Course:

1. 2-D stress
2. 1-D deflection and stiffness
3. Failure criteria
4. Fatigue
5. Shafts and shaft components
6. Gears
7. Springs
8. Other machine elements

Course Description:

The aim of machine design is an understanding of theoretical design of machinery; analysis for prevention of machine elements failure. steps in designing, tasks and activities. It is also aimed to gain the knowledge of varieties of engineering, design process and role of designer, iteration, decision making, resource conversion, systems and devices and variety of needs, need analysis, feasibility study, preliminary design, detail design, revision. Information for need and problems associated with information, variety of information.

MAN 301 Maritime Management I

Objectıves Of The Course:

1) to introduce some of the major issues within the Personnel management; 2) to gain an understanding of the Principles of controlling subordinates and maintaining good relationships; 3) to gain an understanding of the Training in maintenance, health training and hygiene the authority of the master. 4) to gain an understanding of the Punishment and reward.

Course Description:
Seafarers will ship captain in trade, according to the 1995 revision of the STCW-78 convention, to gain the necessary knowledge and skills to manage the crew.

MED 305 Marine Diesel Engines II

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course Description:

The aim of ıntroduction to marine engineering is to gain knowledge about the ıntroduction to marine equipments, Main Engines, Aux. Engines dealing with the operation and maintenance of parts of engines.

AİT 101 ATATÜRK İLKELERİ VE İNKILÂP TARİHİ

Objectıves Of The Course:

Batı kültürleri ile Türk kültürünün karşılaşması sonucu ortaya çıkan siyasi, ekonomik, kültürel ve sosyo-psikolojik problemler karşısında çözülmeye ve yıkılmaya başlayan Osmanlı devletinde çözüm arayışları çerçevesinde yapılan reform hareketleri ve İmparatorluktan milli devlete geçiş sürecinde yaşanan siyasi olaylar ile Mustafa Kemal Atatürk'ün liderliğinde verilen Milli Mücadele sonucu Türkiye Cumhuriyeti'nin kuruluşunun ele alınması.

Course content:

İnkılabın tanımı veTürk İnkılabı, Osmanlı Devleti'nin yıkılışı, Milli Mücadele Dönemi, Milli Mücadele Döneminde yapılan savaşlar, kongreler, devletlerle olan ilişkiler ve yapılan anlaşmalar.

MED 409 Maritime English

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course content:

The aim is to teach the students English who are at maritime schools and cadets. It takes the goal to build up necessary vocabulary on technical documentation related to machinery and assist in reading comprehension.

ETC403 Marine Electrotechnology III

Objectıves Of The Course:

Multy-meter utilization, Marine Cables, Diagrams and electrical circuits, Maintenance and providence of electrical rigging, Marine electronic, power electronic, automatic voltage regulator, AC distribution panel and Fuses, automatic voltage regulator, Alarms, Electrical high power supply, Power Supply panels and fuses, generator and batteries inactuate in parallel and series, Electric motors starters, control systems, electric circuit, motors, generators protection, maintenance, System of inspection, failures determination and elimination of failures.

Course content:

Electrical and electronic devices are commonly used on the board. Naturally these kinds of devices have to be periodically serviced. Maintenance has to be regularly performed.

The main purpose of this course is to gain skill and to get familiar with the electrical machineries. Application cavers functioning, maintenance of all marine appliances.

One-semester course for engineering studies, who are planning to become a marine mechanical engineer. Topics include application, Marine electronic, power electronic, automatic voltage regulator, AC distribution panel, generator protection, Single and parallel generator operation, electric circuit protection, batteries and generator connection in parallel and series. One hour lecture and two hours application. Prerequisite: MEETC 302

MED307 Hydraulic & Pneumatic

Objectıves Of The Course:

By completing this module, the student should be able to:

- Understand the main components of the hydraulic and pneumatic systems
- Design hydraulic and pneumatic circuits.

Design and understand the electro-hydraulic and electro-pneumatic circuits

Course content:

The aim of Hydraulic & Pneumatic covers the basics of pneumatic, electro pneumatic and hydraulic control circuits in a complex mechatronic system. Students will learn the functions and properties of control elements based upon physical principles, and the roles they play within the system. Technical documentation such as data sheets, circuit diagrams, displacement step diagrams and function charts will also be covered. By understanding and performing measurements on the pneumatic and hydraulic control circuits, students will learn and apply troubleshooting strategies to identify, localize and correct malfunctions. Preventive maintenance of (electro) pneumatic and hydraulic components as well as safety issues within the system will be discussed.

LAW451 Maritime Law & Int. Conv. II

Objectıves Of The Course:

1) to introduce some of the major issues within the description and importance ofIntroduction to Maritime Law and Marine Insurance.

2) to gain and understanding International Maritime Regulations and Occurrence of Legal Problems

Course content:

Course will be delivered in Spring Term instructionally. The instructor will provide the students with assignments in order to assess their capacity to work collaboratively and involve in vast research works and this will be evaluated as Mid Term exam. And the Final exam will be a classic written exam as case understanding, handling and finding advisory solutions.

MRE 401 Operation and Maintenance of Main and Auxilary Machinery III
Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course content:

The aim of ıntroduction to marine engineering is to gain basic knowledge about the ıntroduction to marine equipments, dealing with the operation and maintenance of parts of engines.

MED 405 Marine Boilers & Operation

Objectıves Of The Course:

- Learn the basic concepts of Marine Boilers & Operation
- Prepare the students for the training

Course content:

The aim of ıntroduction to Marine Boilers & Operation is to gain knowledge about the ıntroduction to Marine Boilers & Operation equipments dealing with the operation and maintenance of parts of Marine Boilers.

MEC 202 Material Technology

Objectıves Of The Course:

- Learn the basic concepts of Material Technology
- Prepare the students for the training

Course content:

The aim of Material Technology is to teach the methods of production of cast iron, steel and non ferrous metals. Designation and classification of all metals the principle of metal casting.

The plastic working of metals and its principles. Welding techniques and principles. The heat treatment.

NRC 202 SHIP STABILITY II

Objectıves Of The Course:

To help sailors improve their knowledge of ship stability issues who will be the second captain or a captain on merchant ships in accordance with STCW-78 convention 1995 revision.

Course content:

In this course, sailors will learn approximate calculation of areas and volumes. Effects of density. Calculation of surface effect. Stability of moderate and large angels of heel. Trim and list. Dynamic stability. Approximate GM by means of rolling period tests. Inclining tests. Recommendation on intact stability for passenger and cargo ships under 100 meters in length. Intact stability requirements for the carriage of grain. Rolling of ships. Dry docking and grounding . Shear force, bending moments, torsional stress. Damage control, flooding of compartments, effect of flooding on transverse stability, effect of flooding on trim. Draft survey**.**

SAF 421 Maritime Safety IV

Objectıves Of The Course:

1. To refresh knowledge of STCW basic trainings,
2. To teach fire fighting organization on board.
3. To teach protection from hazardous on ship fire.
4. To teach medical first aid.

Course content:

Refreshment of STCW basic trainings. Fire fighting organization on board. Fire fighting equipment maintenance. Protection from hazardous on ship. Medical first aid.

MEC 208 Thermodynamics III

Objectıves Of The Course:

- Learn the basic concepts of moistures air
- Learning the usage of pychometric chart
- Learn to estimate the thermodynamic properties from tables and relations.
- Learn to analyze energy transfer and steam and gas cycles and mıxtures of gas and steam
- Learn to carry out thermodynamic analysis of engineering cycles.

Course content:

The aim of thermodynamics III is to gain knowledge about the application gas and steam cycles. Application of psychometric chart and moisturized air is done. The mixture of gas and steam is analyzed and brief description of heat transfer will be carried out.

MED 412 Engine Room Similator

Objectıves Of The Course:

- Learn the basic concepts of marine engineering
- Prepare the students for the training

Course content:

The aim of introduction to marine engineering is to gain basic knowledge about the introduction to marine equipments, dealing with the operation and maintenance of parts of engines.

FGP499 Graduation Project

Objectıves Of The Course:

A well-defined up-to-date problem based on theoretical and technological investigations has to be solved and the results have to be presented with visual tools.

16. Information on the National Higher Education Systems

The basic structure of the North Cyprus Education System consists of four main stages as pre-school education, primary education, secondary education and higher education.

Pre-school education consists of non-compulsory programs whereas primary education is a compulsory 8 year program for all children beginning from the age of 6. The secondary education system includes “General High Schools” and “Vocational and Technical High Schools”.

The Higher Education System in North Cyprus is regulated by the Higher Education Planning, Evaluation, Accreditation and Coordination Council(Yükseköğretim Planlama, Denetleme, Akreditasyon ve KoordinasyonKurulu , YÖDAK). Established in 1988, the Council regulates the activities of higher education institutions with respect to research, governing, planning and organization. The higher education institutions are established within the framework of the Higher Education Law. All programs of higher education should be accredited by YÖDAK.

Higher education in North Cyprus comprises all post-secondary higher education programmes, consisting of short, first, second, and third cycle degrees in terms of terminology of the Bologna Process. The structure of North Cyprus higher education degrees is based on a two-tier system, except for dentistry, pharmacy, medicine and veterinary medicine programmes which have a one-tier system. The duration of these one-tier programmes is five years except for medicine which lasts six years. The qualifications in these one-tier programmes are equivalent to the first cycle (bachelor degree) plus secondary cycle (master degree) degree. Undergraduate level of study consists of short cycle (associate degree) and first cycle (bachelor degree) degrees which are awarded after the successful completion of full-time two-year and four-year study programmes, respectively.

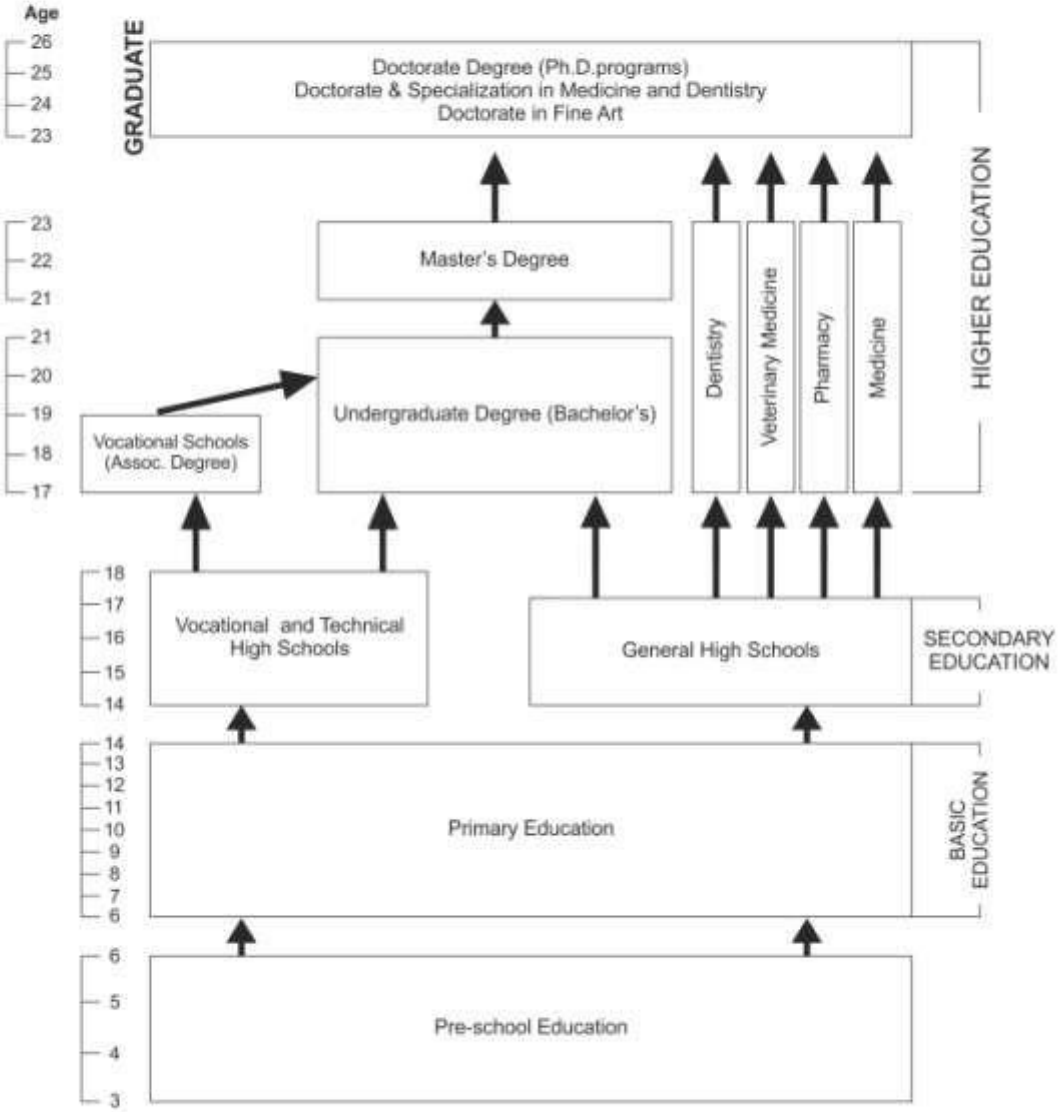
Graduate level of study consists of second cycle (master degree) and third cycle (doctorate) degree programmes. Second cycle is divided into two sub-types named as master without thesis and master with thesis. Master programmes without thesis consists of courses and semester project. The master programmes with a thesis consist of courses, a seminar, and a

thesis. Third cycle (doctorate) degree programmes consist of completion of courses, passing a qualifying examination and a doctoral thesis. Specializations in dentistry, accepted as equivalent to third cycle programmes are carried out within the faculties of dentistry. Specialization in medicine, accepted as equivalent to third cycle programmes are carried out within the faculties of medicine, and university hospitals and training hospitals operated by the Ministry of Health.

Universities consist of graduate schools (institutes) offering second cycle (master degree) and third cycle (doctorate) degree programmes, faculties offering first cycle (bachelor degree) programmes, four-year higher schools offering first cycle (bachelor degree) degree programmes with a vocational emphasis and two-year vocational schools offering short cycle (associate degree) degree programmes of strictly vocational nature.

Second cycle degree holders may apply to third cycle programmes if their performance at the first cycle degree level is exceptionally high and their national central Graduate Education Entrance Examination (ALES) score is also high and their application is approved. The doctoral degree is conferred subject to at least one publication in a cited and refereed journal.

GENERAL STRUCTURE OF THE NORTH CYPRUS EDUCATION SYSTEM



APPENDIX

UNIVERSITY OF KYRENIA
FACULTY OF MARITIME STUDIES
MARINE ENGINEERING

	I. SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
MTH 101	Calculus I	3	2	4	6	
MPH 101	Physics for Mariners I	3	2	4	5	
CHE 101	Chemistry for Mariners	2	1	2,5	3	
SAF 101	Maritime Safety I	2	3	3,5	4	
MEC 101	Techichal Drawing	1	2	2	4	
MED 101	Workshop I	0	4	2	4	
MRE 101	Introduction to Marine Engines I	2	1	2,5	3	
MEC 205	Material Science	2	0	2	4	
	TOTAL	15	15	22,5	33	

	II.SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
MTH 102	Calculus II	3	2	4	6	MTH 101
MPH 102	Physics for Mariners II	3	2	4	5	MPH 101
SAF 102	Maritime Safety II	2	1	2,5	3	
MED 102	Workshop II	0	4	2	4	
MED 104	Diesel Engine I	2	2	3	5	MRE 101
MED 106	Maritime English I	2	0	2	3	MRE 101
MEC 203	Statics	3	0	3	4	MPH 101
PED 102	Physical Education	0	2	1	1	
	TOTAL	15	13	21,5	31	

	III.SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
MTH 112	Lineer Algebra	3	0	3	5	MTH 102
MEL 201	Introduction to Marine Electronics	2	1	2,5	3	MPH102
MED 201	Opr.&Maintenance of Main	3	2	4	5	MED 104
MED 203	Marine Auxiliary Mach. I	2	1	2,5	4	MRE 101
MEC 207	Thermodynamics I	3	0	3	5	
NRC 201	Ship Construction	2	2	3	4	MED 104
	TOTAL	15	6	18	26	

	IV.SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
MTH 201	Differantial Equation	3	0	3	5	MTH 102
MTH 301	Numerical Analysis for Engineers	2	0	2	4	MTH 112
MEC 204	Dynamics	3	0	3	5	MEC 203
MEC 306	Fluid Mechanics	2	2	3	5	MEC 207
MED 202	Marine Auxiliary Mach. II	2	1	2,5	4	MED 203
SAF 214	Maritime Safety III	2	2	3	5	
CMP 152	Int.to Computering	2	2	3	3	
SWM 202	Swimming	0	2	1	2	
	TOTAL	16	9	20,5	33	

	V.SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
MED 301	Marine Electrotecnology I	2	1	2,5	3	MPH 102
MED 303	Engine Room Simulator I	1	3	2,5	4	MED 104
MED 305	Marine Diesel Engines II	2	2	3	4	MED 104
MED 307	Hydrolic - Pnom & Auto. Cont.	2	1	2,5	4	
MAN 301	Maritime Management I	2	0	2	2	
LAW 351	Maritime Law and International	3	0	3	4	
MEC 301	Heat Transfer	3	1	3,5	5	MEC 207
MEC 303	Machine Compenents Designe	3	0	3	4	
	TOTAL	18	8	22	30	

	VI.SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
SGT 303	Seagoing training	0	0	0	25	
	TOTAL	0	0	0	25	

	VII.SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
MEC 208	Thermodynamics II	3	0	3	4	MEC 207
MED 401	Marine Electrotecnology II	2	1	2,5	3	MED 301
MED 403	Opr.&Maintenance of Main II	3	2	4	5	MED 201
MED 405	Marine Boilers & Operation	2	0	2	3	
MEC 202	Material Technology	2	0	2	3	MEC 205
MED 409	Maritime English II	2	0	2	3	MED 106
SAF 421	Maritime Safety IV	2	1	2,5	3	
LAW 451	Maritime Law & International	2	2	3	4	LAW 351
AİT 101	Ataturk's Principles and History of Turkish			0	1	
	TOTAL	18	6	21,0	29	

Total Credit	150
Total ECTS	240

	VIII.SEMESTER					
Course Code	Course name	Theory	App.	Credit	ECTS	Prerequisite
MED 402	Steam & Gas Turbines	2	0	2	3	MED 405
MED 404	Survey Procedures	2	0	2	3	
MED 406	Refrigeration & Conditi	3	0	3	4	MEC 208
MED 408	Automatic Control II	3	0	3	4	MED 307
MEC 310	Hydromechanics	3	0	3	4	
MED 412	Engine Room Similator II	1	4	3	4	MED 303
MAN 402	Maritime Man. II	2	0	2	2	MAN 301
NRC 202	Ship Stability	3	1	3,5	4	NRC 201
FGP 499	Graduation Project	0	6	3	5	
	TOTAL	19	11	24,5	33	