



FACULTY OF PHARMACY

Course Catalogue

Message from the Dean

Welcome to the Near East University Faculty of Pharmacy!

Our Faculty is part of the largest university of North Cyprus in the Eastern Mediterranean landscape. Faculty of Pharmacy has been functional since 2006 and our first graduates were graduated in 2012. I feel proud for being part of the Team who has commenced and instituted the foundations of our Faculty.

Pharmacy - as a profession, is one of the most important links in the network of health sciences. It has been one of the most respected professions throughout the history of every culture.

As the Faculty of Pharmacy, our goal is to provide our students with all the necessary means during their five-year academic life to conform to the highest standards of education. Our Faculty members are all nationally and internationally acknowledged. Pharmacy education requires both theoretical education and practical training at the same time. In this respect, our classrooms, together with our research laboratories have been planned and executed along the lines of the contemporary examples, equipped with most recent technological tools and laboratory equipment.

Pharmacy education is challenging, yet it is also rewarding and joyful. If you want to be a pharmacist, you should put your own efforts to sustain your personal approach towards the multiplicity of experiences and the diversity of knowledge you will acquire, only to construct your own position in the field of pharmacy practice and build your own career upon.

At the end of their university life, we expect our students to establish novel ways of learning, develop necessary skills to follow the advancements taking place in the rapidly evolving spheres of the academic discourse and the technological domain, whose perception of the world is enriched by art with an emphasis on social development; so as to be honorable and intellectual colleagues in our society.

I wish you all the best of luck.

Prof. Dr. İhsan ÇALIŞ

Dean

Faculty of Pharmacy

Table of Contents

Message from the Dean	2
Table of Contents.....	3
Accreditation	4
General Information about Faculty of Pharmacy.....	4
Official length of programme.....	4
Mode of study	4
Profile of the Programme and Method of Education.....	4
Qualification Awarded	5
Level of Qualification	5
Access Requirement(s)	5
Qualification Requirements.....	5
Converting US College Credit Hours to ECTS	6
Transfers from Another Faculty of Pharmacy.....	6
Examination Regulations, Assessment and Grading.....	7
Grading Scheme and Grades.....	7
Occupational Profiles of Graduates.....	7
NEU Pharmacy Student Competency List.....	8
“Oath/ Promise of a Pharmacist”	9
Contacts.....	10
Undergraduate Courses.....	11
Course Descriptions.....	14
Pharmacy Practice Hours.....	29
Faculty of Pharmacy Elective Courses.....	30
Sample Copy of the Diploma Supplement.....	31

This course catalogue is developed to give information about the Pharmacy programme to all who are interested in the Near East University, Faculty of Pharmacy eg. Future students, academics, universities and institutions, bodies abroad.

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 Faculty of Pharmacy and the course programme.

Sincerely

Prof. Dr. İhsan ÇALIŞ

Accreditation

MPharm degree of Faculty of Pharmacy, Near East University has been granted Provisional Certification by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, Illinois, 60603-4810, United States of America, TEL +1 (312) 664-3575; FAX +1 (312) 664-4652, www.acpe-accredit.org.

General Information about the Faculty of Pharmacy

Near East University, Faculty of Pharmacy was established in 2006. The vision of the faculty is achieving excellence through continuous improvement in teaching, interdisciplinary research and to be compatible with the pioneer School of Pharmacies by improving health care through innovations in education, practice, and research. Our mission is to educate students to meet the pharmaceutical needs of the society, to advance pharmaceutical knowledge through research and to serve the profession and the community. To have graduates who are leaders in pharmacy education, pharmacy practice, and pharmaceutical sciences who make a difference on human health.

Our Core Values

- Commitment to excellence in all that we do
- Collaboration and interdependency throughout all aspects of what we do- the education and training of our students; the provision of patient care; scientific discovery, and the generation of new knowledge
- Promoting diversity and inclusiveness of all

Language of Study: English

Official Length of Program: 5 years (excluding one year of English preparatory class)

Mode of Study: Full time

Profile of the Programme and Method of Education

The curriculum is designed to provide knowledge, skills, abilities, attitudes, and values to meet the challenges of a dynamic health care environment. Basic, pharmaceutical and clinical sciences courses together with practice experiences are all incorporated in curriculum to provide students with the expertise and tools to be leaders in the profession of pharmacy. The curriculum is dynamic, constantly changing and is being updated by interdisciplinary faculty committees with student input to meet the requirements of the pharmacy profession and patient care. Active learning and traditional teaching strategies, up-to-date laboratories, and an emphasis on learning as a life-long activity are all integrated and essential to the philosophy of the curriculum.

In Year I, the students take courses in basic sciences. Years II-IV, the students take courses in pharmaceutical sciences and pharmaceutical technology. In the first semester of Year V, courses in pharmacy management, pharmacy services, and industrial pharmacy are given. During the spring term of Year V, students complete 3-month advanced pharmacy practice at a designated pharmacy. Additionally, the students take one introduction to pharmacy practice, three advanced pharmacy practices (including clinical rounds at NEU Hospital) and one hospital pharmacy practice during their education.

Qualification Awarded: MPharm (master's degree / second cycle in Bologna system)

Level of Qualification

Qualifications Framework- European Higher Education Area (QF-EHEA): 2

European Qualifications Framework for Life long Learning (EQF-LLL): 7

Access Requirement(s)

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

Qualification Requirements

186 Near East University Credits (Near East University Credit is contact hour based) that is total 300 ECTS credits must be completed after being successful in the courses to become a graduate of the faculty of pharmacy. In addition all five pharmacy practices (total of 46 ECTS) should be successfully completed.

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 (http://ec.europa.eu/education/ects/ects_en.htm).

Converting US College Credit Hours (semester credit hours – SCH) to ECTS

ECTS is the most commonly used credit system in Europe. The major difference between the European Credit System ECTS and the US College Credit system is that the first is based on student workload and the second on contact hours. The ECTS is oriented towards the time required for a student to meet the intended study outcomes, while the U.S. system is more oriented towards the time a faculty member needs to teach.

Here is an example of conversion of credits from ECTS to Semester Credit Hours for a college or university in the U.S.: 1.67 ECTS = 1.00 US College Credit Hours

Conversion standards may vary between higher education institutions in the U.S.

(<http://www.mastersportal.eu/articles/1110/what-you-need-to-know-about-academic-credit-systems-in-the-us.html>)

A student is required to have minimum pass grade from each course and obtain minimum 2.00/4.00 cumulative Grade point Average (cumulative GPA).

The objectives are to provide the fundamentals of contemporary pharmacy education and to supply an overall and comprehensive outlook on pharmacy profession. It is also aimed to provide the graduates with the abilities to adapt to the technological improvements in the field, with the verbal and written communication skills and also with the knowledge on ethical issues of the profession.

Transfers from Another Faculty of Pharmacy (Recognition of Prior Learning)

A student wishing a transfer from another university must prove her/his English Proficiency if s/he wishes to attend the Faculty of Pharmacy. At the time of OSS examination the candidate's entrance score must not be less than the lowest score for admission to the Near East Pharmacy Faculty. The transcript and course content of the applicant is examined by the education committee and the student is then exempted from the matching courses.

For further details please contact:

International Student Office

Faculty of Communication, 2nd Floor Near East
Boulevard, P.O. Box 92202

Nicosia, TRNC via Mersin 10-Turkey

Phone : +90 (392) 680 20 00
(Ext: 295/143/163/424)

Fax : +90 (392) 680 20 40/43

E-mail : info@neu.edu.tr

Examination Regulations, Assessment and Grading

For MS in Pharmacy degree, students must obtain at least DD (60/100) or S from each course and have a CGPA of not less than 2.00 out of 4.00 and have completed all the courses and summer practices in the program. In addition, students have to get a minimum of 50 points out of 100 in the final exam to be considered successful in a course. The letter grades are calculated based on the student's midterm and final exam grades (If the student is responsible from any quiz, report, presentation, homework etc. grades are also included in the overall grade calculation).

Grading Scheme and Grades

PERCENTAGE	COURSE GRADE	GRADE POINTS
90-100	AA	4.00 (Excellent)
85-89	BA	3.50 (Excellent)
80-84	BB	3.00 (Very Good)
75-79	CB	2.50 (Very Good)
70-74	CC	2.00 (Good)
65-69	DC	1.50 (Pass)
60-64	DD	1.00 (Pass)
59 and below	FF	0 (Failure)

Occupational Profiles of Graduates

Graduates of the Faculty of Pharmacy, pharmacists, may work at community pharmacies, hospital pharmacies, pharmaceutical and cosmetic industries responsible for production, management and sales, regulatory bodies of the Government related to health, medicine and pharmacy affairs, and as clinical pharmacists in hospitals They may choose to pursue an academic carrier at a suitable academic institution in their fields of choice.

NEU Pharmacy Student Competency List

1. Professional Competencies

- 1.1. Patient centered professional approach
- 1.2 Works within legal & ethical frames
- 1.3 Attends continuing education (CE) and continuing personal development (CPD) programs

2. Personal Competencies

- 2.1 Leadership
- 2.2 Decision making and critical thinking
- 2.3 Team work
- 2.4 Communication skills

3. Organisation and Management Competencies

- 3.1 Budget & Procurement
- 3.2 Knowledge on health insurance systems, and reimbursement programs
- 3.3 Managing the pharmacy & supply

4. Pharmaceutical Care Competencies

- 4.1 Full knowledge on medicines (Pharmaceutic and Therapeutic)
- 4.2 Magistral medicine preparation and pharmaceutical calculation
- 4.3 Prescription handling
- 4.4 Therapeutic outcomes monitoring
- 4.5 Consultation services to the patient and patient relatives

5. Pharmaceutical Knowledge Competencies

- 5.1 Knowledge on entire drug development process
- 5.2 Drug analysis & Quality control
- 5.3 Knowledge on herbal pharmaceuticals & drug interaction, medicinal plants

6. Public Health Competencies

- 6.1 Health promotion
- 6.2 General health advice
- 6.3 Herbal remedies, nutrition & wellness

7. Fundamental Sciences Competencies

“Oath / Promise of a Pharmacist”

Version 19 March 2014

As a pharmacist, I vow serve humanity and to support my profession’s ideals and commitments.

I shall be guided in all dimensions of my life by the highest standards of human conduct.

I shall apply the full measure of my knowledge and abilities to improving the health and well being of all those I serve.

I shall always place the needs of all those I serve above my personal interests and considerations.

I shall treat all those I serve equally, fairly, and with respect, regardless of gender, race, religion, culture, or political beliefs.

I shall protect the confidentiality of personal and health information entrusted to me.

I shall maintain my professional knowledge and competence throughout my career.

I shall support the advancement of knowledge and standards of practice in pharmacy.

I shall nurture the preparation of future members of my profession.

I shall use all opportunities to develop collaboration practice with all healthcare professionals in my environment

In taking this solemn oath / promise, I honor those who have supported my development as a pharmacist and commit myself to never act in a manner that is contrary to these promises.

(Prepared by the Working Group on Pharmacist Ethics and Professional Autonomy of the International Pharmaceutical Federation, 1 March 2013.

Adjusted by the Bureau on 19 March 2014)

CONTACTS

Near East University, Faculty of Pharmacy

E-mail: pharmacy@neu.edu.tr

Phone: +90 (392) 680 20 00 / 122

Fax: +90 (392) 680 20 38

Near East University

Yakın Doğu Bulvarı, PK: 99138

Lefkoşa / KKTC

Mersin 10 – TURKEY

Phone: +90 (392) 444 0 YDU

Fax: +90 (392) 223 64 61

E-mail: info@neu.edu.tr

Near East University, Public Relations

E-mail: info@neu.edu.tr

Phone: +90 (392) 223 64 64 / 408

Near East University Hospital

Emergency : 153

Phone: +90 392 4440535

Undergraduate Courses

1st Year (Fall Semester) (01)

Code and Name of the Course	T	P	C	ECTS
NEPHAR 100 English Language I	2	0	2	2
NEPHAR 101 Anatomy	4	0	4	5
NEPHAR 102 General Chemistry	3	0	3	6
NEPHAR 103 Physics	2	0	2	4
NEPHAR 104 Mathematics	3	0	2	3
NEPHAR 105 Physiology	4	0	4	5
NEPHAR 106 Turkish Language I	2	0	2	2
NEPHAR 116 Histology	1	0	1	2
NEPHAR 118 Introduction to Pharmacy	0	1	0	1
TOTAL CREDIT			16	30

1st Year (Spring Semester) (02)

Code and Name of the Course	T	P	C	ECTS
NEPHAR 107 Biostatistics	2	0	2	3
NEPHAR 108 Medical and Molecular Biology	2	0	2	4
NEPHAR 109 Organic Chemistry I	3	0	4	5
NEPHAR 110 Analytical Chemistry I	3	0	3	4
NEPHAR 111 Analytical Chemistry I Lab.	0	3	1	3
NEPHAR 112 Turkish Language II	2	0	2	2
NEPHAR 113 Pathology	3	0	3	5
NEPHAR 115 English Language II	2	0	2	2
NEPHAR 117 Social Pharmacy	2	0	2	2
TOTAL CREDIT			17	30

2nd Year (Fall Semester) (03)

Code and Name of the Course	T	P	C	ECTS
NEPHAR 200 English Language III	2	0	2	2
NEPHAR 201 Analytical Chemistry II	2	0	2	4
NEPHAR 202 Analytical Chemistry II Lab.	0	3	1	3
NEPHAR 203 Biochemistry	3	0	3	4
NEPHAR 205 Pharmacology I	5	0	5	6
NEPHAR 206 History I	2	0	2	2
NEPHAR 209 Organic Chemistry II	2	0	2	2
NEPHAR 216 Pharmaceutical Information Management	1	2	2	3
NEPHAR 290 Pharmacy Practice I (annual)	0	4	2	4
TOTAL CREDIT			15	30

2nd Year (Spring Semester) (04)

--	--	--	--	--

Code and Name of the Course	T	P	C	ECTS
NEPHAR 207 Pharmaceutical Botany	2	0	2	3
NEPHAR 208 Pharmaceutical Botany Lab.	0	3	1	3
NEPHAR 211 Pharmacology II	4	0	4	8
NEPHAR 212 Clinical Biochemistry	2	0	2	4
NEPHAR 214 History II	2	0	2	2
NEPHAR 215 Microbiology	3	0	3	3
NEPHAR 218 English Language IV	2	0	2	2
NEPHAR 219 Communication Skills in Pharmacy	1	0	1	2
Electives (Group I)	2	0	2	3
TOTAL CREDIT			15	30
3rd Year (Fall Semester) (05)				
Code and Name of the Course	T	P	C	ECTS
NEPHAR 301 Pharmacognosy I	2	0	2	3
NEPHAR 302 Pharmacognosy I Lab.	0	3	1	2
NEPHAR 303 Pharmaceutical Technology I	3	0	3	5
NEPHAR 304 Pharmaceutical Technology I Lab.	0	3	1	2
NEPHAR 305 Pharmaceutical Chemistry I	2	0	2	4
NEPHAR 306 Pharmaceutical Chemistry I Lab.	0	3	1	2
NEPHAR 307 Pharmacology III	5	0	5	7
NEPHAR 308 Pharmacy Regulations and Deontology	2	0	2	2
Electives (Group I, II)	2	0	2	3
TOTAL CREDIT			19	30
3rd Year (Spring Semester) (06)				
Code and Name of the Course	T	P	C	ECTS
NEPHAR 310 Pharmacognosy II	2	0	2	4
NEPHAR 311 Pharmacognosy II Lab.	0	3	1	2
NEPHAR 312 Pharmaceutical Technology II	2	0	2	3
NEPHAR 313 Pharmaceutical Technology II Lab.	0	3	1	2
NEPHAR 314 Pharmaceutical Chemistry II	2	0	2	3
NEPHAR 315 Pharmaceutical Chemistry II Lab.	0	3	1	2
NEPHAR 316 Toxicology	3	0	3	3
NEPHAR 318 Cosmetic	2	0	2	2
NEPHAR 320 Toxicology Lab.	0	3	1	2
NEPHAR 390 Pharmacy Practice II	1	2	2	4
Electives (Group I, II)	2	0	2	3
TOTAL CREDIT			17	30
4th Year (Fall Semester) (07)				
Code and Name of the Course	T	P	C	ECTS
NEPHAR 400 Pharmaceutical Technology III	3	0	3	4
NEPHAR 401 Colloquium	0	1	0	1
NEPHAR 402 Pharmacognosy III	2	0	2	3

NEPHAR 403 Pharmacognosy III Lab.	0	3	1	2
NEPHAR 406 Pharmaceutical Chemistry III	2	0	2	4
NEPHAR 407 Pharmaceutical Chemistry III Lab.	0	3	1	2
NEPHAR 409 Clinical Pharmacy I	3	0	3	3
NEPHAR 411 Pharmaceutical Technology III Lab.	0	3	1	2
NEPHAR 412 Pharmacokinetics and Biopharmaceutics	1	0	1	2
NEPHAR 490 Pharmacy Practice III (annual)	0	4	2	4
Electives (Group I, II)	2	0	2	3
TOTAL CREDIT			16	30
4th Year (Spring Semester) (08)				
Code and Name of the Course	T	P	C	ECTS
NEPHAR 404 Phytotherapy	3	0	3	3
NEPHAR 410 First Aid in the Pharmacy	1	1	1	2
NEPHAR 413 Pharmaceutical Technology IV	3	0	3	4
NEPHAR 414 Pharmaceutical Technology IV Lab.	0	3	1	2
NEPHAR 415 Pharmacy Management and Accounting	2	0	2	3
NEPHAR 416 Clinical Pharmacy II	3	0	3	3
NEPHAR 417 Radiopharmacy	1	0	1	2
NEPHAR 418 Pharmaceutical Biotechnology	1	0	1	2
NEPHAR 419 Pharmaceutical Care	1	0	1	2
NEPHAR 491 Pharmacy Practice IV	1	2	2	4
Electives (Group I, II)	2	0	2	3
TOTAL CREDIT			18	30
5th Year (Fall Semester) (09)				
Code and Name of the Course	T	P	C	ECTS
NEPHAR 501 Graduation Project	1	3	2	10
NEPHAR 502 Rational Drug Use	2	0	2	4
NEPHAR E 800 Pharmacy Management	4	0	4	5
NEPHAR E 801 Industrial Pharmacy	4	0	4	5
NEPHAR E 802 Pharmacy Services	6	0	6	6
TOTAL CREDIT			18	30
5th Year (Spring Semester) (10)				
Code and Name of the Course	T	P	C	ECTS
NEPHAR 590 Pharmacy Practice V	0	35	15	30
TOTAL CREDIT			15	30

Course Descriptions

NEPHAR 100 English Language I - 2 Credits

The aim of this course is to improve students' ability in listening, speaking, reading, and writing by using texts and materials related to their discipline. The main focus will be on human body systems.

NEPHAR 101 Anatomy - 4 Credits

Introduction to Anatomy, General terminology and concepts, Upper Extremity; Lower Extremity; Thorax Anatomy and Diaphragm; Heart and Circulatory System, Nose, larynx; Trachea and Lungs, Anterior Abdominal Wall and Peritoneum, Oral cavity, Pharynx; Oesophagus, Stomach, Small and Large intestines, Liver, Bile duct and Portal System; Pancreas, and Spleen; Male and Female Genital Organs, Urinary System; Skeleton of Head; Facial Anatomy; Scalp, Mimic Muscles, Anterior and Lateral Regions of Neck, Introduction to Nervous System, Bulbus Medulla Spinalis, Pons and Mesencephalon, Cerebellum, Cranial Nerves, Diencephalon, Telencephalon, Cerebrospinal Fluid, Ventricles, Meninges and Sinuses of the Brain, Blood Supply of Central Nervous System, Introduction to Autonomic Nervous System, Autonomic Nervous System; Sympathetic-Parasympathetic Nervous System; Orbit and its Structure, Eye and Visual Pathways, Ear, Hearing, Balance and Auditory Pathways, Endocrine Glands.

NEPHAR 102 General Chemistry - 3 Credits

Main objective of General Chemistry is to give students a basic knowledge of the principles of chemistry. Matter (Properties & Measurement), Atoms and Atomic Theory, Chemical Compounds, Chemical Reactions, Aqueous Solutions, Gases, Electrons in Atoms, Periodic Table, Chemical Equilibrium, Chemical Kinetics, Acids Bases.

NEPHAR 103 Physics - 2 Credits

Measurement and units, vectors, one-dimensional motion, and motion in the plane; particle dynamics and Newton's Laws, work, energy, electric field, Coulomb's law, Gauss's Law and electric potential; condensers and dielectrics, current and resistance, magnetic field. After covering the following content of the course you will have had adequate and basic information about fluid mechanics and technology courses.

NEPHAR 104 Mathematics - 2 Credits

Function, types of Functions, Arithmetic sequences and series, Limit and continuity, Derivatives and applications of Derivatives; Logarithms, Logarithmic and exponential functions and their properties; Integral and techniques of integration; Integral applications, Differential equations, Matrix Algebra, Determinants and Linear equations, systems of Linear equations and their solutions.

NEPHAR 105 Physiology - 4 Credits

Cell Physiology, Blood Physiology, Muscle Physiology, Physiology of the Nervous System, Circulatory Physiology, Respiratory Physiology; Excretory Physiology, Digestive Physiology, Endocrine Physiology, Sensory Physiology.

NEPHAR 106 Turkish Language I - 2 Credits

Definition and importance of Language; relationship between language and culture; written language and its characteristics; external structure and rules in written expression; spelling and punctuation rules; planning and outlining, theme, point of view, supporting ideas, paragraph writing in writing essays; concept of composition, rules and planning in writing compositions; framework of composition writing based on selected samples, theme, paragraph analysis, error analysis in composition writing, general ambiguity and incoherency, writing genres (memoirs, anecdotes, stories, criticisms, novels, etc.), formal writing (CV, petition, report, bibliography, presentation, scientific writing, articles, etc.); studies on introduction/development/conclusion parts of articles, note taking and summarizing skills and techniques.

NEPHAR 107– Biostatistics- 2 Credits

Biostatistics, research, statistics and research related to the required level of basic behaviours, skills, and provide information on active learning. After taking this course, students use scientific research and interpret the basic statistical techniques, are able to present the data and learn the basic concepts of statistics. Interactive lessons to Biostatistics processed, according to notifications received from students' stream course. This course aims to teach statistical methods used in research and the ability to use these methods for health care services.

NEPHAR 108 Medical & Molecular Biology - 2 Credits

This course will provide an introduction to cell biology and will cover the following topics: cell chemistry, organelles, transcription, translation, cell architecture, metabolism, signal transduction pathways, cell division, cell cycle, DNA technology and stem cell applications.

NEPHAR 109 Organic Chemistry - 4 Credits

This is an introductory organic chemistry course focusing on fundamentals in organic chemistry. Mainly, basic knowledge of bonding, hybridization, resonance structures, isomers acids-bases, stereochemistry, reaction types and chemical reactions, alkanes, alkenes, alkynes, alkyl halides, aromatics, reactions of aromatic molecules, nomenclature, synthesis and their reactions.

NEPHAR 110 Analytical Chemistry I - 3 Credits

The objectives of this course are to provide students with basic classical analytical techniques for quantitative and qualitative analysis. The following topics will be covered: Gravimetric methods of analysis, titrimetric methods of analysis, aqueous-solution chemistry, theory of neutralization titrations, titration curves for complex acid/base systems, precipitation

titrimetry, complex-formation titrations, an introduction to electrochemistry, and applications of standard electrode potentials.

NEPHAR 111 Analytical Chemistry I Laboratory - 1 Credit

The objectives of this course are to provide students with practical skills on basic classical analytical techniques for quantitative and qualitative analysis. The following experiments will be done: Testing for group 1 cations, testing for group VII anions, gravimetric analysis (measuring the density of cola and calibration of volumetric glassware), neutralization titration (strong acid/strong base and strong acid/weak base), precipitation titration (determination of potassium bromide), and complexometric titration (determination of calcium and water hardness).

NEPHAR 112 Turkish Language II - 2 Credits

Oral Expression and the importance of speech in human life, accurate and effective speaking techniques, diction and its importance, speaking varieties, introduction to the types of verbal expressions, prepare speeches for important days. Conference, interview, speech, discussion, debate, panel, forum, symposium and open session and realizing one of the mentioned activities.

NEPHAR 113 Pathology - 3 Credits

Introduction to Pathology; inflammation and repair, cellular response to pathogenic factors, pathology of circulatory disorders and hypertension, neoplasia, drug effects.

NEPHAR 115 English Language II - 2 Credits

The aim is to continue to improving the skills of listening, note-taking, speaking, reading and writing. In order to attain this, besides body systems, materials related with the terms of basic hospital vocabulary are also chosen. An introduction into the types of illnesses and diseases is also planned.

NEPHAR 116 Histology - 1 Credit

To help students acquire the basis of histology and to correlate this knowledge with other science branches. To demonstrate knowledge of the structural and functional characteristics of the cell and the four basic tissues, the systems and their related organs and to relate their structural features with their functional properties. Introduction to Histology and Terminology, Microscopes and Microscopic Techniques, The cell and its organelles, The cell membrane, The nucleus, Intracellular transport systems, Cytoskeleton, Epithelial Tissue, Connective Tissue, Cartilage Tissue, Bone Tissue, Muscle Tissue, Nervous Tissue, The basic features of Systems; Blood and The Cardiovascular System; Respiratory System, Gastrointestinal System, Endocrine and Genital Systems, Urinary System.

NEPHAR 117 Social Pharmacy –2 Credits

The aim of the course is to emphasize the responsibility of the pharmacy profession in drug matters at a societal level. Social Pharmacy training highlights the social factors that influence drug use and allows the pharmacists to understand their active social role in health care. It

helps pharmacist to understand the attitudes and beliefs of the patient and helps to play their maximum role in providing the best health care service. It helps pharmacist to understand the pharmaceutical ethics. It aims at attaining the right medication at the appropriate price and helps rational drug use. Social Pharmacy course content outline: The history of pharmacy, Health and Illness Behaviour (Health psychology), Pharmaco epidemiology and Social epidemiology, Ethical foundations and deontology, Communications applicable to pharmacy, pharmacoeconomy, clinical pharmacy. As a result, the goal of the course is to give students a deeper and more detailed appreciation of how social and behavioral sciences are applied to problems in pharmacy profession.

NEPHAR 118 Introduction to Pharmacy – 0 Credit

This course is designed to provide orientation to first year pharmacy student. Information on 5 year pharmacy education program, pharmacy practices, educational and career pathways. In addition to introduce academic staff and give detailed information on different departments of pharmacy profession.

NEPHAR 200 English Language III - 2 Credits

In this course, specific texts are used to develop reading comprehension skills. Before reading, while reading and after reading activities will be done to encourage discussion and speaking abilities. The texts chosen have a wide range of in-discipline vocabulary which will enable them to develop their vocabulary bank. Writing short descriptive paragraphs will also be another aim this course.

NEPHAR 201 Analytical Chemistry II - 2 Credits

The objectives of this course are to provide students with basic instrumental analytical techniques for quantitative and qualitative analysis. The following topics will be covered: An introduction to spectrometric methods, components of optical instruments, atomic absorption (AAS) and emission spectrometry (AES), ultraviolet/Visible (UV/VIS) molecular absorption spectrometry, infrared spectrometry (IR), chromatographic separations, high-performance liquid chromatography (HPLC), gas (GC), supercritical fluid (SFC) and thin-layer chromatography (TLC), capillary electrophoresis (CE) and some extraction techniques.

NEPHAR 202 Analytical Chemistry II Laboratory - 1 Credit

The objectives of this course are to provide students with practical skills on basic instrumental analytical techniques for quantitative and qualitative analysis. The following experiments will be done: Basic statistics in analytical chemistry, acids, bases and buffers, developing standard addition and calibration curves, thin-layer chromatography (TLC), column chromatography, high-performance liquid chromatography (HPLC) (determination of caffeine in beverages and soft drinks), and atomic absorption spectrometry (AAS) and atomic emission spectrometry (AES) (determination of calcium ion concentration in water).

NEPHAR 203 Biochemistry - 3 Credits

To study the structure, function and the chemical structures and also the chemical interactions taking place in the cellular components of the living organism. Carbohydrates, Classification

of carbohydrates, Glucose Metabolism, Glycogen Metabolism, Gluconeogenesis, Digestion of Carbohydrates, Metabolic disorders of carbohydrates, Lipids, Classification of Lipids, Lipid Metabolism, Digestion of Lipids, Metabolic disorders of lipids, Amino acid, Proteins, Digestion of proteins, Metabolic Disorders of Proteins, Properties of Enzymes, Use of enzymes, Vitamins and Coenzymes, Hormones, Effects of Hormones, Classification of Hormones, Nucleic Acids and Water and Minerals.

NEPHAR 205 Pharmacology I – 5 Credits

Basic concepts of pharmacology, related molecular, cellular mechanisms and terms of pharmacodynamics, pharmacokinetics, and specific areas in pharmacology such as pharmacogenetics, pharmacovigilance, rational drug use and drug interactions, drug abuse. The physiologic and pathologic roles of autocooids and their therapeutic uses.

NEPHAR 206 History I - 2 Credits

Late Ottoman history and early 1900 history including economic and sociologic evaluations.

NEPHAR 207 Pharmaceutical Botany - 2 Credits

The primary goal of Pharmaceutical Botany is to teach the scientific names and recognizing botanical properties of medicinal, toxic, economically valued and all useful (food, spice, dye, textile etc) plants. Botanical properties, habitation and distribution of the medicinal, poisonous (toxic) and useful plants and plant based-life forms algae, lichens, edible and poisonous mushrooms, to differentiate the medicinal and poisonous plants in nature and the importance of the plants (active ingredients, medicinal and other usages) are given. Knowledge about flora, herbarium and the protection of nature and environment are also contributed.

NEPHAR 208 Pharmaceutical Botany Laboratory -1 Credit

The goal of this course is for students to gain laboratory expertise in the characterization of morphology and anatomy of medicinal plants and classification of their plant families and to be able to study medicinal plants in a scientific manner. Characterization and naming of plants, identification of morphological characteristics, herbarium preparation and preservation of plant specimens, concepts concerning identification of plants with pharmaceutical value; diagnosis of medicinal plants; identification of Coniferae and Angiospermae plant families, which are found in the flora of Turkey and Northern Cyprus and their importance in the field of Pharmacy.

NEPHAR 209 Organic Chemistry II - 2 Credits

To educate and instruct students with functional groups of organic compounds; alcohols, phenols, ethers, epoxides, aldehydes, ketones, carboxylic acids and derivatives, amines; their naming, general structures, properties, synthesis and chemical reactions.

NEPHAR 211 Pharmacology II –4 Credits

The pharmacological properties of drugs affect gastrointestinal, respiratory and cardiovascular system and NSAIDs.

NEPHAR 212 Clinical Biochemistry - 2 Credits

To aid the diagnosis of metabolic diseases, and monitoring of therapy and also to understand the biology of diseases. Topics include Diabetes, Liver function and Clinical Endocrinology. Carbohydrate metabolic disorders, Lipid Metabolic Disorders, Protein Metabolism Disorders, Iron, Porphrin and Hemeprotein Disorders, Trace elements Disorders, Kidney and Liver Function Tests, Enzymes in Diagnosis and Hereditary Diseases and their Biochemistry.

NEPHAR 214 History II - Atatürk İlke ve İnk. Tar. II - 2 Credits

Atatürk's principles and Turkish Revolution.

NEPHAR 215 Microbiology - 3 Credits

Introduction to Microbiology, General Bacteriology General mycology, General Virology, Sterilization antiseptics and disinfection, Antimicrobial substances and their mechanisms of action, Mechanisms of antibiotic resistance, Infectious diseases, introduction to Immunology, pharmaceutical-cosmetics- microorganism connections, the role of the pharmacist in Microbiology will be discussed

NEPHAR 216 Pharmaceutical Information Management – 2 Credits

The aim of the course is to develop a clear understanding of the fundamentals of pharmaceutical and medicinal information; students to be able to gain knowledge and experience about foundations of pharmaceutical and medicinal information management. Main concepts and definitions about pharmaceutical and medicinal information management, information needs and information-seeking behaviors in pharmacy and medical sciences, information sources, information Technology in pharmaceutical and medicinal information management, information and knowledge management in pharmacy and medical sciences, developing professional and managerial skills, developments in pharmaceutical and medicinal information management, medical information in the pharmaceutical industry, research information in the pharmaceutical industry, legal and ethical requirements in pharmaceutical and medicinal information management and career development in pharmaceutical and medicinal information management.

NEPHAR 218 English Language IV - 2 Credits

Texts will encourage students to broaden their vocabulary, to have discussions about the topics, to search for specific information, to write about the findings, search results and also to give oral presentations.

NEPHAR 219 Communication Skills in Pharmacy - 1 Credit

Students will gain knowledge and skills about effective communication skills especially with patients and health care workers. Topics include pharmacist and communication, Effective communication techniques, communication and complicating factors, Communication

Models, pharmacist- suicidal patient communication, Pharmacist-aids patient communication, Pharmacist-pregnant patient communication, Pharmacists-child patient communication, pharmacist-elderly patient communication, Pharmacist-adolescent patient communication, pharmacist- Psychiatric patient communication, Pharmacist-dependent cancer-patient communication

NEPHAR 290 Pharmacy Practice I - 2 Credits

Students must consult with her/his adviser and enrol at the beginning of the 2nd year's Fall term (Third semester). This internship can be carried out only at community Pharmacies. Internship period is one month (at least 20 working days) and practiced during the Summer Term.

NEPHAR 301 Pharmacognosy I - 2 Credits

To teach the anatomical structure of powdered drugs, identification and quantification of secondary metabolites. Theoretical description of microscopical analysis, measurements using microscopes; plant cell and tissue, microscopic analysis: ergastic substances; leaf epidermal components, root, rhizome, fruit and seeds; analysis of drugs; saponins, antranoids, cyanogenetic glycosides, tannins; identification of proteins and enzymes, chromatography application.

NEPHAR 302 Pharmacognosy I Laboratory - 1 Credit

To teach the anatomical structure of powdered drugs, identification and quantification of secondary metabolites. Theoretical description of microscopical analysis, measurements using microscopes; plant cell and tissue, microscopic analysis: ergastic substances; leaf epidermal components, root, rhizome, fruit and seeds; analysis of drugs; saponins, antranoids, cyanogenetic glycosides, tannins; identification of proteins and enzymes, chromatography application.

NEPHAR 303 Pharmaceutical Technology I - 3 Credits

The objectives of this course are, to teach the meaning of Pharmaceutical Technology, understand the basic terms and processes required for preparation of a drug formulation and administration, solve the problems and calculations required for preparing a formulation, comprehend the concept of dose and maxima dose terms and calculate them, cognize water which is one of the basic contents of drug preparation and get the knowledge of information of the other excipients, explain solution and types of solution and have the skills to prepare a solution, learn all the techniques required to prepare and control one-phased systems, comprehend the pediatric and geriatric aspects of pharmaceutical formulations, understand the preformulation studies, know the veterinary pharmaceutical dosage forms, understand the drug packaging materials and required properties and European aspects of the regulation of drug products to development of pharmaceuticals.

NEPHAR 304 Pharmaceutical Technology I Laboratory - 1 Credit

The objectives of this course are, to achieve that students could prepare a magistral prescription and understand basic processes. Besides, to understand dose and maximal dose

terms, to do necessary calculations and maximal dose calculations are other aims of this course. In addition; students should have knowledge about solution, aromatic water, syrup, lemonade, infusion and decoction type of prescriptions and also they should have skills to prepare these kinds of formulations. This practical include Pharmaceutical Calculations, Balances, Aromatic Water, Solution for Inhalation, Iodine Solutions-I, Iodine Solutions-II, Diluted Hydrogen Peroxide Solution, Anhydrous Phosphate (Joulie's) Oral Solution, Lemonades, Syrups, Elixirs, Infusion, Decoction and Homework presentations.

NEPHAR 305 Pharmaceutical Chemistry I - 2 Credits

The purpose of this course is to give information on physiochemical properties of drugs and examples of phase I and II metabolism of drugs, structure-activity relationships, synthesis and biotransformation of some of the drugs affecting on central nervous system (CNS) including general anesthetics, sedative-hypnotics, tranquilizers, neuroleptics, antidepressants, anticonvulsants, narcotic analgesics and NSAIDs.

NEPHAR 306 Pharmaceutical Chemistry I Laboratory - 1 Credit

The purpose of this course is to give various methods on the synthesis, separations and purifications of drugs active materials in laboratory conditions. Laboratory safety, synthesis of pharmaceutical compounds, filtration, crystallization, extraction, distillation and other laboratory techniques are done.

NEPHAR 307 Pharmacology III – 5 Credits

The pharmacological properties of drugs affecting endocrine, central nervous system disorders and chemotherapeutics.

NEPHAR 308 Pharmacy Regulations and Deontology - 2 Credits

Laws and regulations on pharmacy practice and deontology.

NEPHAR 310 Pharmacognosy II - 2 Credits

The objective of this course is to teach steroids and terpenoids and emphasize their therapeutic activities. Definition of plant secondary metabolites such as steroids and terpenoids, their physical and chemical properties, identification and isolation techniques, their activities, drugs that are rich in these components and their biological and pharmaceutical applications.

NEPHAR 311 Pharmacognosy II Laboratory - 1 Credit

The goal of this course is to teach students about techniques of solid and volatile oil isolation and qualitative and quantitative pharmacopoeia analysis. To familiarise students with isolation techniques, qualitative and quantitative analysis methods, application of chromatography techniques to plant chemistry.

NEPHAR 312 Pharmaceutical Technology II - 2 Credits

The objectives of this course are, to achieve that students could define two-phased drug release systems, know the formation theories of these formulations, comprehend the structure

of the two-phased systems, ingredients involved and rheological behaviors, design the formulation of these systems and prepare them, determine the required properties of two-phased systems with characterization methods, explain the stability of these systems and evaluate this phenomenon by different techniques, list the quality control

parameters of the obtained systems and evaluate the quality of the systems and define the suppositories, ovules and inserts.

NEPHAR 313 Pharmaceutical Technology II Laboratory - 1 Credit

The objectives of this course are, to achieve that students could understand the terms of semi solid and two phase dosage forms and also their preparation techniques. In addition; students should have pharmaceutical knowledge about lotion, suspension, emulsion, gel, liniment, ointment, ovule and suppository type of prescriptions and additionally cosmetic preparation examples share for the student to support cosmetic course. They should have skills to prepare these kinds of formulations. This practical course include Preparation of lotion, Preparation of suspension, Preparation of oral emulsion, Determination of emulsion Type, Preparation of liniment, Preparation of gel, Preparation of ointment, Preparation of cold cream, Preparation of cream stearate, Preparation of ovule, suppository, Sample of Cosmetic preparations as aftershave lotion, lipstick, cleaning cream and Homework presentations.

NEPHAR 314 Pharmaceutical Chemistry - 2 Credits

The purpose of this course is to give a basic concept on general features, mode of action, structure-activity relationship, synthesis and biotransformation of the drugs affecting on cardiovascular system. Cardiac glycosides, antiarrhythmics, antianginal and vasodilatory agents, antihypertensives, antihyperlipidemics, coagulant and anticoagulant agents, antianemic drugs, trombolitics, gastrointestinal system agents, and diuretics.

NEPHAR 315 Pharmaceutical Chemistry Laboratory - 1 Credit

The course aims to give students theoretical and practical knowledge about the separation and purification techniques and determination of some physical parameters of drug molecules. Specific experiments include, Separation of solids - Separation of liquids, Determination of density of liquids and solids, Refractometry – Polarimetry, Melting point and boiling point determination, Pharmacopeia analysis (urea, distilled water).

NEPHAR 316 Toxicology - 3 Credits

Description and the classification of toxicology. Basic information about the exposure, toxicity mechanisms and the therapeutic procedures of xenobiotics and the therapeutic substances. Introduction to basic toxicology, definitions and classification of toxic effects, therapeutic monitoring and adverse drug reactions, toxic alcohols and solvents, drug abuse and hallucinogenic agents, toxicity of

sympathomimetics, toxic gases and particles, toxicity of metals, pathological pathogenic toxins and chemical agents as threats to public safety, toxicity of NSAIDs, phytotoxicology and natural toxins, toxicity of pesticides and risk assessment and regulatory toxicology.

NEPHAR 318 Cosmetic –2 Credits

The main target of this course is; introduce to Cosmetology, relation between pharmaceutical technology. Understand the basic information like content of formulations, preparations, application etc.

NEPHAR 320 Toxicology Laboratory - 1 Credit

Giving basic toxicology laboratory knowledge, application of analytical, in vivo and in vitro toxicity testing methods. Introduction, laboratory animals and acute toxicity test systems, analysis of toxic compounds in water, analysis of toxic compounds in dairy milk, teratogenic effect of Diazinon on chick embryo, evaluation of the experimental results of teratogenicity, determination of cyanide in samples and Group Studies.

NEPHAR 390 Pharmacy Practice II - 15 Credits

Students must consult with her/his adviser and enrol at the beginning of the 3rd year's Fall term (5th semester). This internship can be carried out only at community Pharmacies. Internship period is one month (at least 20 working days) and practiced during the Summer Term.

NEPHAR 400 Pharmaceutical Technology III - 3 Credits

Solid dosage forms and modern drug delivery systems, the general properties and processes and the powder technology as the building stones of these systems, definition of all the formulations involved, demonstration of all the ingredients including the excipients of these formulations and preparation techniques including related calculations, design and preparation of different formulations for different administration routes, conduction of the control tests on the final products, dissolution test and their evaluation and explaining the factors affecting the stability of these systems and evaluating them with the techniques involved.

NEPHAR 401 Colloquium

This program is composed of a series of mandatory seminars for 4th year students. Experienced academics, pharmacists in different fields of pharmaceutical sciences or pharmacy profession are invited to convey the experience they have gained in their respective carriers. The purpose of this seminar series is to utilise the perspectives of these professionals on their professional lives to enrich the knowledge of the students in the future.

NEPHAR 402 Pharmacognosy III - 2 Credits

There are many preparations on the market that contain natural and/or synthetic forms of alkaloids. This course aims to teach students on alkaloid-containing medicines, their biosynthesis, their use. Alkaloids, alkaloid biosynthesis and reactions; protoalkaloids and related drugs; pyridin and piperidine alkaloids and their derivation; tropane alkaloids and their derivation; quinoline alkaloids and their derivation; opium alkaloids; aporphine, pyrrolizidine

and quinolizidine alkaloids and their derivation; purine alkaloids and their derivation; steroidal and terpenic alkaloids and their derivation for medicinal purposes.

NEPHAR 403 Pharmacognosy III Laboratory - 1 Credit

The goal of this course is to teach students the isolation of active compounds from natural sources and perform pharmacopoeia analysis of plant medicines. Alkaloids, related reactions, Solanaceae alkaloid colorimetric measurements, total alkaloid measurements at *C. chiniae*, isolation of caffeine from black tea and its pharmacopoeia analysis, activity measurement of antibiotics, qualitative analysis of herbal teas. .

NEPHAR 404 Phytotherapy - 3 Credits

The well-known and widespread complementary treatment method Phytotherapy, terminology and related national and international associations are given. Pharmacy quality herbal material, standardization, manufacturing of medicinal teas, medicinal oils and phytomedicines (tablet, syrup, lozenges etc) are explained. Usage of phytotherapeutics to support body or treat indications; their dosage, contraindications, drug interactions and warnings for the people are given.

NEPHAR 406 Pharmaceutical Chemistry III - 2 Credits

The aim of this course is to give a basic concept on general features, mode of action, structure-activity relationship, synthesis and biotransformation of antiinfective drugs, antiseptics and disinfectants, antifungal and antihelminthic drugs, antibacterial drugs, antimycobacterial drugs, antibiotics, antiviral drugs, antineoplastic drugs.

NEPHAR 407 Pharmaceutical Chemistry III Laboratory - 1 Credit

This course provides students with a background in modern analysis with an emphasis on instrumentation. Fundamental theoretical principles, capabilities, applications, and limitations of modern analytical instrumentation used for qualitative and quantitative analysis are provided through specific examples and extensive problem solving, spectral analysis. The instruments studied include UV-Vis, FTIR, NMR, Mass Spectrometry.

NEPHAR 409 Clinical Pharmacy I – 3 Credits

The aim of this course is to describe the concepts of clinical pharmacy, pharmaceutical care and patient-oriented pharmacy, and the roles of the clinical pharmacist in rational drug use and successful pharmacotherapy. The contents of this course: Introduction and History of Clinical Pharmacy, Patient Oriented Pharmacy, Current Status in World, Roles and Responsibilities of Clinical Pharmacist, Systematic Approach to Drug Therapy - Case Study, Patient Counseling and Compliance in Clinical Pharmacy Practice and Patient Education Techniques, Clinical Pharmacists' Approach to Pain Cases and Role of the Pharmacist in Treatment, Pharmacists' Approach to Diarrhea and Constipation and Role of the Clinical Pharmacist in Treatment, Proper Use of Pharmaceutical Dosage Forms, Drug Use in Pregnancy and Lactation - Clinical Pharmacists' Approach, Upper Respiratory System Infect.,

and Clinical Pharmacist - Update on Common Cold, Flu and Vaccination and Sinusitis, Pharyngitis and Otitis media

NEPHAR 410 First Aid in the Pharmacy - 1 Credit

Basic concepts and application of First Aid for pharmacy students.

NEPHAR 411 Pharmaceutical Technology III Laboratory - 1 Credit

The objectives of this course are, to achieve that students could understand the terms of solid dosage forms and modern drug delivery systems and also their preparation techniques. In addition; students should have knowledge about tablet, capsule, lozenge, microcapsules, effervescent granule type of prescriptions and also they should have skills to prepare these kinds of formulations. Controls of Powder Samples, Direct Compression Process of Tablet Formulation, Dry Granulation Process, Wet Granulation Process, Process of Tablet Formulation and Controls, Effervescent Granule, Bioadhesive Tablet, Chewable Tablet, Controlled Release Tablet, Hard Lozenges, Dissolution Tests and Tablet Coating, Capsule Preparation and Controls, Microcapsules and Homework presentations.

NEPHAR 412 Pharmacokinetics and Biopharmaceutics - 1 Credit

Learning definitions of bioavailability and bioequivalence to be informed of methods of determination of bioavailability, the test criteria of bioavailability, factors that effect bioavailability, bioequivalence, generics and getting information about pharmacokinetics: compartment models, graphic models, linear regression, peeling method, calculation of area under the curve, calculation of pharmacokinetic parameters, application of intravenous infusion, loading dose, continuation dose.

NEPHAR 413 Pharmaceutical Technology IV - 3 Credits

The objectives of this course are, to achieve that students could define parenteral preparations, lyophilized products, other sterile solutions and dialysis solutions, classify them, demonstrate related physical and physiological concepts, explain all ingredients including excipients, comprehend the preparation techniques, design and prepare them, understand all the equations involved and solve the problems, priority of isotonicity, know the sterilization techniques, make a formulation sterile, evaluate the control tests conducted on the final product, explain on the factors affecting the stability of these systems and evaluate them with the techniques involved, understand what a medical device is, know the basic materials and preparation techniques and explain the factors affecting the stability of drug formulation and evaluate them with the techniques involved.

NEPHAR 414 Pharmaceutical Technology IV Laboratory - 1 Credit

The objectives of this course are, to achieve that students could understand the terms of parenteral dosage forms and ear, nasal, ophthalmic drug delivery systems and also their preparation techniques. In addition; students should have knowledge about ear, nasal, ophthalmic drops, eye wash, parenteral nutrition, irrigation solutions, infusion solutions,

dialysis solutions, ampules and vials type of prescriptions and also they should have skills to prepare these kind of formulations: Ear Preparations, Nasal Preparations, Ophthalmic Preparations, Large Volume Parenteral Preparations (parenteral nutrition), Large Volume Parenteral Preparations (irrigation solutions), Small Volume Parenteral Preparations (ampules), Small Volume Parenteral Preparations (vials) and Homework presentations.

NEPHAR 415 Pharmacy Management & Accounting - 2 Credits

Introduction to accounting, rules, regulations, polices on how to open a community pharmacy, business rules, tax information, analysis of invoices, employment, introduction to management, stock management

NEPHAR 416 Clinical Pharmacy II - 3 Credits

The aim of this course is to describe the roles of the clinical pharmacist in pharmacotherapy of and education and monitoring in acute and chronic diseases. The contents of this course: Clinical Use of Glucocorticosteroids, The Role of Clinical Pharmacist in Hypertension Treatment, Pharmacotherapy of Congestive Heart Failure and Role of the Clinical Pharmacist in Digoxin Monitoring, Peptic Ulcer and Helicobacter pylori, What Clinical Pharmacist should be know about Gastroesophageal Reflux Disease, Clinical Pharmacists' Approach to Lower Respiratory System Infections, Role of the Clinical Pharmacist in Asthma Management and Monitoring, Chronic Obstructive Respiratory Disease and Inhaler Devices, Approach to Meningitis Cases, Diabetes and Clinical Pharmacist

NEPHAR 417 Radiopharmacy- 1 Credit

Basic Atom, Radiation, Radioactivity Definitions, Types of Radiation, General Concepts of Radiopharmacy, Radiopharmaceuticals Different of Radiochemicals and other Drugs, Characteristics of Radiopharmaceuticals, Radiopharmacist, Radiopharmaceutic, Preparation and Applications of Radiopharmaceuticals and Radionuclides, Quality Controls of Radiopharmaceuticals and Generators, Adverse Reactions of Radiopharmaceuticals, GRP(Good Radiopharmacy Practice), Design and Development of Radiopharmaceuticals (Development of Formulation).

NEPHAR 418 Pharmaceutical Biotechnology - 1 Credit

Pharmaceutical Biotechnology has emerged as a new research field that arose as a result of the fusion of recombinant DNA technology and traditional pharmaceutical sciences. This course aims to provide basic knowledge for students about the processes such as recombinant DNA technology, transferring genetic information from one organism to another and selection of appropriate expression system such as bacterial expression systems, yeast, mammalian expression systems, insect cells, transgenic animals and plants for production of biopharmaceuticals, production and formulation of biopharmaceuticals derived by recombinant DNA technology, peptide protein delivery systems, non-viral DNA delivery systems, gene therapy, manufacturing of biopharmaceuticals under GMP conditions, and regulatory issues about biopharmaceuticals.

NEPHAR 419 Pharmaceutical Care - 1 Credit

Drug treatment, written information, Creation and implementation of the patient plan, monitoring and evaluation of treatment outcomes, Pharmacovigilance. Reporting side effects, Patient records and protection of patients' rights, Collaborative practice, Drug related problems and pharmacists intervention 2, Therapeutic target (goal) - develop the plan of pharmaceutical care for the individual patient, Patient care in patients with asthma, Patient care in patients with cardiovascular disease, Patient care in gynaecology, Patient care in self-medication, Patient care in mental health

NEPHAR 490 Pharmacy Practice III - 2 Credits

There are 40 hours of training over the year (Fall and Spring terms) and it is compulsory in groups of this course. This internship can be carried out only at Near East University Hospital's Pharmacy. There are periods in theoretical courses in them. At the end of the year, students will write a report that contains information about the processed theoretical and hospital internships.

Learning outcomes about the duties of the authority and responsibility of hospital pharmacists, hospitals to obtain general information about the Drug Management System is being used in pharmacy and system applications, inpatient drugs on public access to information, obtain general information about not lying medication to the patient, inventory control, drug supply (procurement, purchase, control) to obtain information about the hospital pharmacist to learn about the workings of the commission and served as the commission; pharmacist to learn about the duties of these committees, information about specific drugs and their preparation are prepared in hospitals, hospital pharmacies in the shift system and the seizure learn about the role of hospital pharmacists, red, green, purple and orange prescription drugs, these drugs control and learn about management, hospital to learn about the tasks and management personnel in the pharmacy, to learn about relations with employees of the pharmacy and his team understand the importance of work, information on relations hospital in managers informed about relationships with other health professionals in hospitals, the relationship with the Health Institutions about knowledge acquisition, pharmacy sketch, plan, information about the layout.

NEPHAR 491 Pharmacy Practice IV - 15 Credits

This internship can be carried out at any hospital pharmacy, private pharmacy, scientific research centre, drug industry, or official health organisation. Internship period is one month (at least 20 working days) and practiced during the 4th year's Summer Term.

NEPHAR 501 Graduation Project - 2 Credits

Each student works on a project with an academic advisor, writes and gives a poster presentation as their thesis for graduation.

NEPHAR 502 Rational Drug Use - 2 Credits

The fundamental principles of rational drug use, individualization of drug therapy, application of rational drug use in common diseases, the effect of drug interactions on rational drug use.

NEPHAR 590 Pharmacy Practice V - 15 Credits

This internship can be carried out only in 10th semester (Spring term). Internship period is 3 months (at least sixty consecutive working days). This internship can be carried out only at community Pharmacies or Hospital Pharmacies.

NEPHAR E800 Pharmacy Management – 4 Credits

Competence about how to open a pharmacy and pharmacy business rules, accounting and tax information, pharmacy-warehouse relationships, rules and tips, drug tracking system, information on national healthcare system, modern pharmacy design and merchandising, technical information on pharmaceuticals and selling tips, technical information on dermocosmetics and selling tips.

NEPHAR E801 Industrial Pharmacy– 4 Credits

Course planned basically to define potential role in pharmaceutical industry. Explain R&D process, Registration steps, Supply chain process, Organisation charts and job descriptions, Marketing and Sales, Medical Department responsibilities, Pharmacovigilance, Change Control System, Good Manufacturing Practice (GMP), QbD, Process Validations, Bioequivalency, Bioavailability.

NEPHAR E802 – Pharmacy Services – 6 Credits

Pharmacy Services course consists of five different modules. Each module given below contains information that will be useful for the pharmacists when counselling about health and drug.

A. Herbal Pharmaceutical Products

This course will be done by case studies, in which the students will be using their knowledge about herbal pharmaceutical products while giving counselling service for patients on drugs and healthcare. Each case study group investigate the case disorders and the herbal products in pharmacies for these diseases. Each group will prepare a presentation about herbal pharmaceutical products in pharmacies for treatment and/or supporting body for the related diseases. When an indication is the subject at the course, the group of students (pharmacists) who were to prepare HPPs for that indication, answer the questions of other students, who are pretending to be patients. By this practice, all the students experience patient-pharmacist relationship, as each group member is acting as a patient to another group.

B.Over the Counter (OTC) drugs

The pharmacologic groups and therapeutic uses of non-prescription or OTC drugs, adverse effects of OTC drugs, patient counselling and decision making for OTC drugs.

C. Clinical Pharmacy Practice

Clinical Pharmacy Practice consists of working in an institutional setting for 8 weeks. The students work under close supervision of the clinical preceptors. The primary objective of this

practice experience is to introduce students to a hospital pharmaceutical care setting where they will develop basic technical skills, knowledge, application skills, professional judgment, communication skills, and competency necessary in the profession of pharmacy.

D. Advanced Communication Skills in Pharmacy Practice

This course will focus on advanced communication skills for pharmacy education. It aims providing a comprehensive and efficient method to explore and develop the skills of the pharmacy senior students. It highlights the importance of effective communication within teams to reduce risk and error. It aims to teach patient-centred care and assertiveness strategies to help pharmacist contribute more and to communicate well in a medical environment. Course content outline: patient-centred care (PCC) & guide to patient counselling, assertiveness, interviewing & assessment, communication with special patients & children, medication safety and communication.

E. Pharmaceutical Care

Use the basic principles of pharmaceutical care, the model of data collection and medication history review. Learn the principles of rational use of pharmacotherapy in the plan of pharmaceutical care. Understand treatment guidelines in care for patients with chronic diseases in case studies.

Pharmacy Practice Hours

Code and Name of the Course	T	P	C	ECTS
NEPHAR 290 Pharmacy Practice I (Annual Practice) 2nd Year (Fall Semester) (03) 2nd Year (Spring Semester) (04)	0	4	2	4
NEPHAR 390 Pharmacy Practice II (Summer Practice)	1	2	2	4
NEPHAR 490 Pharmacy Practice III (Annual Practice) 4th Year (Fall Semester) (07) 4th Year (Spring Semester) (08)	0	4	2	4
NEPHAR 491 Pharmacy Practice IV (Summer Practice)	1	2	2	4
NEPHAR 590 Pharmacy Practice V 5th Year (Spring Semester) (10)	0	35	15	30
TOTAL CREDIT			23	46

Faculty of Pharmacy Elective Courses

Course Codes and Names

NEPHAR E 606 Role of Pharmacist in Doping Control
NEPHAR E 607 Laboratory Safety
NEPHAR E 608 Chemicals and Environment
NEPHAR E 610 Research Methods and Methodologies
NEPHAR E 611 Life Art and Pharmacy
NEPHAR E 612 Herbal Medicine
NEPHAR E 613 Basic Principles of Pharmaceutical Botany
NEPHAR E 614 New Trends in Health Care Technologies: Telemedicine, e-Health and Other Developments
NEPHAR E 615 Drug Nomenclature I
NEPHAR E 616 Advanced Communication with Health Profession
NEPHAR E 617 Immunology
NEPHAR E 618 Stem Cell
NEPHAR E 619 Literature Reading and Scientific Project Organization
NEPHAR E 620 Time Management and Personal Development
NEPHAR E 621 Anger Management
NEPHAR E 622 Neurolinguistic Program
NEPHAR E 623 Communications and Health Profession
NEPHAR E624 Nutritional Support Pharmacy
NEPHAR E 625 Introduction to Computer Science

NEPHAR E 706 Dispensing and Product Information
NEPHAR E 728 Introduction to Pharmaceutical Granulation – Process Validation
NEPHAR E 729 Case Studies in Clinical Biochemistry
NEPHAR E 740 Rational Drug Use I
NEPHAR E 741 Rational Drug Use II
NEPHAR E 744 Cosmetic Toxicology
NEPHAR E 745 Scientific Presentation
NEPHAR E 747 Vaccines: Novel Production Technologies
NEPHAR E 749 Nutraceuticals and Dietary Supplements
NEPHAR E 751 Vaccines: Novel Production Technologies
NEPHAR E 753 Personalized Nutrition - Nutrigenomis
NEPHAR E 754 Personalized Pharmacotherapy - Pharmacogenetics
NEPHAR E 755 Cancer Biology and Oncogenetics
NEPHAR E 756 Aromatherapy
NEPHAR E 757 Dermatological Drugs and Dermocosmetic Products
NEPHAR E 758 Advance Pharmacology
NEPHAR E 759 Rational Pharmacotherapy and Modular Application
NEPHAR E 760 Human Molecular Genetics
NEPHAR E 761 Evidence Based Pharmacy
NEPHAR E 762 Complementary Therapies
NEPHAR E 763 Oncology Pharmacy Practice
NEPHAR E764 Special Topics in Phramaceutical Botany
NEPHAR E765 Chronobiology, Chronopharmacology and Chronotherapy
NEPHAR E766 Essential Oils
NEPHAR E767 Hot Topics in Pharmaceutical Sciences

 **NEAR EAST UNIVERSITY**
DIPLOMA SUPPLEMENT

Diploma No:

Diploma Date: DD/MM/YY Near East Boulevard, Nicosia – North Cyprus +90 392 680 2000

4.3. Program details and the individual grade/marks obtained:

<p>This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.</p>							
1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION							
1.1. Family name(s):			1.3. Place and date of birth:				
1.2. Given name(s):			1.4. Student identification number:				
2. INFORMATION IDENTIFYING THE QUALIFICATION							
2.1. Name of the qualification and (if applicable) the title conferred Eczacılık Yüksek Lisans Master Degree in Pharmacy Eczacı Pharmacist			2.4. Name and type of institution administering studies SAME AS 2.3.				
2.2. Main field(s) of study for qualification PHARMACY HEALTH SCIENCES			2.5. Language(s) of instruction/examinations ENGLISH				
2.3. Name and status of awarding institution YAKIN DOĞU ÜNİVERSİTESİ, ÖZEL ÜNİVERSİTE NEAR EAST UNIVERSITY, PRIVATE UNIVERSITY							
3. INFORMATION ON THE LEVEL OF THE QUALIFICATION							
3.1. Level of qualification Master's Degree in Pharmacy			3.2. Official length of program Normally 5 Years (excluding 1 year English Preparatory School, if necessary), 2 semesters per year, 14 weeks per semester (300 ECTS).				
3.3. Access requirement(s) High school diploma Placement through a centralized national university placement examination NEU Private Examination							
4. INFORMATION ON THE CONTENTS AND RESULTS GAINED							
4.1. Mode of study Full-Time			4.2. Programme requirements The master degree is awarded to students who have successfully completed all courses in the curriculum, including six month pharmacy practice and have obtained cumulative grade point average (CGPA) value at least 2.00 on a 4.00 scale and have no failing grades. The objectives are to provide the fundamentals of contemporary pharmacy education and to supply an overall and comprehensive outlook on pharmacy profession. It is also aimed to provide the graduates with the abilities to adapt to the technological improvements in the field, with the verbal and written communication skills and also with the knowledge on ethical issues of the profession.				
4.3. Programme details and the individual grades/marks/ECTS obtained Please see the next page.							
4.4. Grading scheme, grade translation and grade distribution guidance: For each course taken, the student is assigned one of the following grades by the course teacher. For MS in Pharmacy degree, students must obtain at least DD or S from each course and have a CGPA of not less than 2.00 out of 4.00 and have completed all the courses and summer practices in the program. The total credit points for a course are obtained by multiplying the coefficient of the final grade by the credit hours. In order to obtain the GPA for any given semester, the total credit points are divided by the total credit hours. Students who obtain a CGPA of 3.00-3.49 at the end of a semester are considered as "Honour Students" and those who obtain a CGPA of 3.50-4.00 at the end of a semester are considered as "High Honour Students" and this is recorded in their academic report. The letter grades, the quality point equivalents are:							
Percentage	Course	Coefficient	Grade	Percentage	Course	Coefficient	Grade
90-100		4	AA	70-74		2	CC
85-89		3.5	BA	65-69		1.5	DC
80-84		3	BB	60-64		1	DD
75-79		2.5	CB	59 and below		0	FF
I- Incomplete S- Satisfactory Completion, U-Unsatisfactory, NA-Not Attended, E-Exempted, W- Withdrawn							
4.5 Overall Classification Of The Qualification: CGPA:/4.00 Final Grade Of The Degree:							
5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION							
5.1. Access to further study May apply to third cycle programmes.			5.2. Professional status conferred This degree enables the holder to exercise the profession.				
6. ADDITIONAL INFORMATION							
6.1. Additional information To be eligible for an MPharm degree at Near East University Faculty of Pharmacy, all pharmacy practices should be successfully completed. These practices are NEPHAR 290 Pharmacy Practice I (0 4 2) (ECTS 4), NEPHAR 390 Pharmacy Practice II (1 2 2) (ECTS 4), NEPHAR 490 Pharmacy Practice III (0 4 2) (ECTS 4), NEPHAR 491 Pharmacy Practice IV (1 2 2) (ECTS 4) and NEPHAR 590 Pharmacy Practice V (0 35 15) (ECTS 30).			6.2. Further Information Sources Department web site https://neu.edu.tr/academic/faculties/faculty-of-pharmacy/ University web site https://neu.edu.tr/ The Council of Higher Education of Turkey http://www.yok.gov.tr Higher Education Planning, Evaluation Accreditation and Coordination of North Cyprus Council Web site http://www.ncyodak.eu/				

1 st Year (1 st Semester)						1 st Year (2 nd Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
NEPHAR 100	English Language I	2	2	Compulsory		NEPHAR 108	Medical and Molecular Biology	2	4	Compulsory	
NEPHAR 101	Anatomy	4	5	Compulsory		NEPHAR 109	Organic Chemistry I	4	5	Compulsory	
NEPHAR 102	General Chemistry	3	6	Compulsory		NEPHAR 110	Analytical Chemistry I	3	6	Compulsory	
NEPHAR 103	Physics	2	4	Compulsory		NEPHAR 111	Analytical Chemistry I Lab.	1	4	Compulsory	
NEPHAR 104	Mathematics	2	3	Compulsory		NEPHAR 112	Turkish Language II	2	2	Compulsory	
NEPHAR 105	Physiology	4	6	Compulsory		NEPHAR 113	Pathology	3	5	Compulsory	
NEPHAR 106	Turkish Language I	2	2	Compulsory		NEPHAR 115	English Language II	2	2	Compulsory	
NEPHAR 116	Histology	1	2	Compulsory		NEPHAR 117	Social Pharmacy	2	2	Compulsory	

2 nd Year (3 rd Semester)						2 nd Year (4 th Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
NEPHAR 200	English Language III	2	2	Compulsory		NEPHAR 207	Pharmaceutical Botany	2	3	Compulsory	
NEPHAR 201	Analytical Chemistry II	2	4	Compulsory		NEPHAR 208	Pharmaceutical Botany Lab.	1	3	Compulsory	
NEPHAR 202	Analytical Chemistry II Lab.	1	3	Compulsory		NEPHAR 211	Pharmacology II	4	8	Compulsory	
NEPHAR 203	Biochemistry	3	4	Compulsory		NEPHAR 212	Clinical Biochemistry	2	4	Compulsory	
NEPHAR 205	Pharmacology I	4	6	Compulsory		NEPHAR 214	History II	2	2	Compulsory	
NEPHAR 206	History I	2	2	Compulsory		NEPHAR 215	Microbiology	3	3	Compulsory	
NEPHAR 216	Pharmaceutical Information Management	2	3	Compulsory		NEPHAR 218	English Language IV	2	2	Compulsory	
NEPHAR 220	Pharmacology I Laboratory	1	2	Compulsory		NEPHAR 219	Communication Skills in Pharmacy	1	2	Compulsory	
NEPHAR 290	Pharmacy Practice I (annual)	2	4	Compulsory		NEPHAR E	Electives (Group I)	2	3	Elective	

3 rd Year (5 th Semester)						3 rd Year (6 th Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
NEPHAR 301	Pharmacognosy I	2	3	Compulsory		NEPHAR 310	Pharmacognosy II	2	4	Compulsory	
NEPHAR 302	Pharmacognosy I Lab.	1	2	Compulsory		NEPHAR 311	Pharmacognosy II Lab.	1	2	Compulsory	
NEPHAR 303	Pharmaceutical Technology I	3	5	Compulsory		NEPHAR 312	Pharmaceutical Technology II	2	3	Compulsory	
NEPHAR 304	Pharmaceutical Technology I Lab.	1	2	Compulsory		NEPHAR 313	Pharmaceutical Technology II Lab.	1	2	Compulsory	
NEPHAR 305	Pharmaceutical Chemistry I	2	4	Compulsory		NEPHAR 314	Pharmaceutical Chemistry II	2	3	Compulsory	
NEPHAR 306	Pharmaceutical Chemistry I Lab.	1	2	Compulsory		NEPHAR 315	Pharmaceutical Chemistry II Lab.	1	2	Compulsory	
NEPHAR 307	Pharmacology III	5	7	Compulsory		NEPHAR 316	Toxicology	3	3	Compulsory	
NEPHAR 308	Pharmacy Regulations and Deontology	2	2	Compulsory		NEPHAR 318	Cosmetic	2	2	Compulsory	
NEPHAR E	Electives (Group I, II)	2	3	Elective		NEPHAR 320	Toxicology Laboratory	1	2	Compulsory	
						NEPHAR 390	Pharmacy Practice II	2	4	Compulsory	
						NEPHAR E	Electives (Group I, II)	2	3	Elective	

4 th Year (7 th Semester)						4 th Year (8 th Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
NEPHAR 400	Pharmaceutical Technology III	3	4	Compulsory		NEPHAR 404	Phytotherapy	3	4	Compulsory	
NEPHAR 402	Pharmacognosy III	2	3	Compulsory		NEPHAR 410	First Aid in Pharmacy	3	4	Compulsory	
NEPHAR 403	Pharmacognosy III Lab.	1	2	Compulsory		NEPHAR 413	Pharmaceutical Technology IV	3	4	Compulsory	
NEPHAR 406	Pharmaceutical Chemistry III	2	4	Compulsory		NEPHAR 414	Pharmaceutical Technology IV Lab.	1	3	Compulsory	
NEPHAR 407	Pharmaceutical Chemistry III Lab.	1	2	Compulsory		NEPHAR 415	Pharmacy Management and Accounting	2	3	Compulsory	
NEPHAR 409	Clinical Pharmacy I	3	4	Compulsory		NEPHAR 416	Clinical Pharmacy II	4	5	Compulsory	
NEPHAR 411	Pharmaceutical Technology III Lab.	1	2	Compulsory		NEPHAR 491	Pharmacy Practice IV	2	4	Compulsory	
NEPHAR 412	Pharmacokinetics and Biopharmaceutics	1	2	Compulsory		NEPHAR E	Electives (Group I,II)	2	3	Elective	
NEPHAR 490	Pharmacy Practice III (annual)	2	4	Compulsory							
NEPHAR E	Electives (Group I, II)	2	3	Elective							

5 th (9 th Semester)						5 th (10 th Semester)					
Course Code	Course Name	CR	ECTS	Status	Grade	Course Code	Course Name	CR	ECTS	Status	Grade
NEPHAR 501	Graduation Project	2	14	Compulsory		NEPHAR 590	Pharmacy Practice V	15	30	Compulsory	
NEPHAR E 800	Pharmacy Management	6	6	Compulsory							
NEPHAR E 801	Industrial Pharmacy	5	5	Compulsory							
NEPHAR E 802	Pharmacy Services	5	5	Compulsory							

TOTAL CREDITS: 186 TOTAL ECTS: 300

7. CERTIFICATION OF THE SUPPLEMENT

- 7.1. Date :
7.2. Name and Signature : Ümit Serdaroğlu
7.3. Capacity : Registrar
7.4. Official stamp or seal :

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

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 Koordinasyon Kurulu – 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) - (önlisans derecesi) and first cycle (bachelor degree) - (lisans derecesi) 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) – (yüksek lisans derecesi) and third cycle (doctorate) – (doktora derecesi) 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



