

VOCATIONAL SCHOOL OF HEALTH SERVICES
Pathology Laboratory Techniques
2025-2026

SEMESTER I

MYO101 BASIC ANATOMY AND PHYSIOLOGY

(3+0), ECTS: 3

Introduction to anatomy and physiology and short terminology, axes, planes, terms indicating location and direction; general information, cell theory, structural features, cell organelles, cell division; information on providing substance exchange, locomotor system anatomy and physiology- osteology, locomotor system; arthrology; general information, joint types, movements. myology; anatomy, contraction mechanism, striated muscles, cardiac muscle, smooth muscle physiology, respiratory system anatomy and physiology. nose, paranasal sinuses, larynx, trachea, lungs. physiology of respiration, ventilation, diffusion, perfusion, respiratory regulation, cardiovascular system anatomy and physiology. blood: functions, components, shaped elements of blood, blood groups. metabolism of the heart, heart sounds. Heart chambers, vessels, digestive system Anatomy and Physiology I. Mouth anatomy, masticatory muscles, Pharynx, esophagus, stomach, small-large intestines, liver. gallbladder, pancreas, digestive glands, digestive system II. Digestion in mouth, stomach, small-large intestines digestion. liver functions, CHO digestion, fat-protein digestion. Vitamin-mineral-electrolyte functions, urinary system Anatomy and Physiology. Kidney function, nephron, urine formation, fluid-electrolyte balance. Water distribution in the body, Electrolytes-anion-base balance. Renin-angiotensin system, Genital organs-reproductive physiology. Female and male genital organs. Hormonal control of the reproductive system, hypothalamus, pituitary, gonadotropin hormones. Ovarian hormones, reproductive cycle, Endocrine system anatomy and physiology. Endocrine glands, their functions. Physiological functions of hormones, classification. Hormones and target cells, Anatomy and Physiology of the Nervous System. Development of nervous tissue, types of neurons, functions, synapse, neuroglia cells. CNS and PNS, -Sensory organs, Anatomy and Physiology. Visual pathways, hearing and balance pathways.

PAT105 HISTOLOGY

(2+0), ECTS: 4

The definition of histology and the process of preparing histological material will be able to understand, define cells, tissues, organs, have information about connective tissue and epithelial tissue and understand the properties of tissues, recognize the systems in the human body and understand their properties, have information about bone and cartilage tissue, have information about fat tissue, have information about skin tissue, understand brain tissue and its properties, have information about muscle tissue and its properties.

PAT109 BASIC CONCEPTS IN PATHOLOGY**(2+0), ECTS: 4**

What is pathology, learn about the procedures applied in the pathology laboratory, learn about cellular injury and adaptation, learn about cell death and its types, learn about infectious agents, learn about hemodynamic disorders, learn about acute and chronic infections, learn about tumor types, learn about tumor nomenclature, learn about benign and malignant neoplasms

GKM101 GENERAL CHEMISTRY**(2+0), ECTS: 3**

Matter and its Properties, Measurement and Unit Systems, Atom and its Structure, Bohr Atomic Theory, Modern Atomic Theory, Periodic Table, Quantum Numbers, Elements, Compounds and Mixtures, Mole Concept, Finding Chemical Formulas, Chemical Compounds, Calculations Based on Chemical Reactions, Chemical Bonds, Formal Charge, Polarity of Bond, Acid-Base Concept, Acid-Base Reactions, Titration, Solutions and Concentration, Molarity Normality, Molality, Percentage Calculations by Mass and Volume, Buffer Solutions, pH, Equilibrium Constants, Chemical Balance, Calorie Calculation in Foods (Carbohydrate, Protein, Fat)

RPSI209 POSITIVE PSYCHOLOGY AND COMMUNICATION SKILLS (UZSEÇ)
(2+0), ECTS: 2

Learning the Definition and Basic Concepts of Positive Psychology, Learning the Theoretical Foundations of Positive Psychology, Learning the Brain Infrastructure of Social Behaviors, Emotional Intelligence, Emotional Intelligence in Adults, Children and Adolescents, Marriage and Business Life, Principles of Emotional Intelligence, Learning the Relationship of Emotional Intelligence with Personality Development, Marriage and Business Life, Learning the Concepts of Self-Recognition and Awareness, Learning the Concepts of Recognition of Others and Empathy, Learning Communication Skills, Learning Motivation and Planning Skills, Learning Problem-Solving Skills, Learning Anger Management Skills, Learning Relationship Management Skills, Learning the Concept of Persistence and Impulse Control Skills, Learning Healthy Decision-Making Skills, Learning the Concepts of Compromise

TURK103 TURKISH LANGUAGE I**(2+0), ECST:2**

Learns the necessity of the connection between language and culture, learns about the historical course of the Turkish Language, learns the rules of spelling and punctuation, its necessity and its contribution to success in life, learns the most appropriate use of words in concise and written expression, learns to use ideas and feelings correctly and effectively.

INGU103 ENGLISH I**(2+0), ECTS: 2**

Introduction, the verb to be, subject pronouns, demonstrative pronouns, countable/uncountable nouns, quantifiers, Simple present tense, frequency adverbs, object pronouns, possessive adjectives, have got/has got, meli,-malı, (must/mustn t)-abilirsiniz, -abilirsiniz(can/cant), Past tense (Simple Past Tense), Understands and comments on what he/she listens at the relevant level, Increases vocabulary with various reading passages, Present tense, Conjunctions (and-but-therefore-because), Comparisons, Gains the ability to understand various English reading passages at the lower intermediate level.

ATA103 PRINCIPLES OF ATATURK AND HISTORY OF REVOLUTION I (2+0), ECTS: 2

Concepts, definitions, course methods and definition of resources, Industrial Revolution and French Revolution, Dissolution of Ottoman Empire (XIX. Century), Tanzimat and Islahat Fermani, I. and II. Constitutional Monarchy, I. World, Tripoli and Balkan Wars, Mondros Armistice, Wilson Principles, Paris Conference, M. Kemal's Arrival in Samsun and the Situation in Anatolia, Amasya Circular, National Congresses, Opening of the Chamber of Deputies, Establishment of TBMM and Internal Revolts, Fundamental Organization Law, Establishment of Regular Army, I. II. İnönü, Kütahya-Eskişehir and Sakarya Field Battles and the Great Offensive, Treaties during the War of Independence, Lausanne Peace Treaty, Abolition of the Sultanate

RKUL103 UNIVERSITY CULTURE I (UZSEÇ)**(0+2), ECTS: 4**

Each semester includes seminars, conferences, panels, workshops and talks to be held for 14 weeks within the framework of a program consisting of suggestions from the academic units, student council and student clubs at the university.

PAT109 DISEASES KNOWLEDGE (BZSEÇ)**(2+0), ECTS:3**

Will be able to gain information about health protection, Will be able to define the terms related to diseases and general characteristics of diseases, Will be able to apply disease protection methods and understand the immune status, Will be able to learn the treatment methods of diseases according to systems, Will know the systems in the human body, Will learn the signs and symptoms of diseases and treatment methods of the systems in the human body.

SEMESTER II**PAT 112 GENERAL HISTOTECHNOLOGY****(2+0), ECTS: 5**

Lists and defines the workflow in the pathology laboratory in order, Names biopsies according to the methods of taking biopsies and organs, Defines and performs the fixation processes of tissues coming from the pathology laboratory, Performs tissue tracking and preparation processes, Performs sectioning and routine tissue staining processes in microtome, Learns fixation preparation methods, Knows the purpose and stages of tissue tracking, Can eliminate

the negativities that occur as a result of staining, Performs decalcification processes of hard tissues.

PAT102 LABORATORY SAFETY IN PATHOLOGY

(2+0), ECTS: 2

Learns the risks of devices and tools used in pathology, Recognizes consumables, formol, xylene and dyes used in pathology laboratories and learns their risks, Learns personal protection methods in pathology laboratories, Learns waste control in pathology laboratories, Learns safety measures against chemical and biological substances, Learns first aid in laboratory accidents, Learns hazard classes, warning signs and precautions, Learns ergonomics, stress, noise, excessive work, Learns quality management in pathology laboratories.

DEVICE USED IN PATHOLOGY AND THEIR MAINTENANCE

(2+0), ECTS:2

Knows the working principle of pathology laboratories, Recognizes the glassware used in pathology laboratories, Learns about the devices used in pathology laboratories, Learns about the maintenance of the devices used in pathology laboratories, Learns about the use and maintenance of the microscope, Learns about the maintenance and use of the microtome device, Learns about the maintenance and use of the tissue tracking device, Learns about the maintenance and use of the frozen device.

PAT 100 PATHOLOGY LABORATORY APPLICATION

(0+4), ECTS: 7

Knows the features to be considered in material acceptance, Applies protocol numbering and registration procedures, Applies tissue sampling and cassette recording phase in the macroscopy phase, Knows and applies fixative preparation methods, Applies tissue tracking and back tracking process, Applies microtome sectioning process, Applies Hematoxylin & Eosine staining stages, Applies cytological material preparation and PAP staining process.

MIK 101 BASIC MICROBIOLOGY

(2+0), ECTS:2

Learn basic information about microorganisms and microbiology, Learn general devices-tools used in microbiology and the use of the microscope, Learn sterilization and disinfection, Learn basic materials required for microorganism culture, Learn about microorganism production, Learn about viruses, staphylococci, streptococci, pneumococci and bacilli, fungi, Learn antimicrobial agents-antigen and antibody reactions, Learn flora and sample taking techniques, Learn microbiology diagnostic methods

INGU104 ENGLISH II**(2+0), ECTS: 2**

Gains the ability to understand various English reading passages at the lower intermediate level, Increases vocabulary with various reading passages, Understands and comments on what he listens at the relevant level

TURK104 TURKISH LANGUAGE II**(2+0), ECTS:2**

Learns the necessity of the connection between language and culture, Learns about the historical course of the Turkish language, Learns the rules of spelling and punctuation, their necessity and their contribution to success in life, Learns the most appropriate use of words in oral and written expression, Learns how to use ideas and feelings correctly and effectively.

ATA104 PRINCIPLES OF ATATURK AND HISTORY OF REVOLUTIONS II**(2+0), ECTS: 2**

By knowing the sources related to Atatürk's principles, one can go to the roots of the Turkish revolution and consciously possess Atatürk's reforms. One can have a consciousness that produces policies in accordance with them by knowing one's country, homeland and nation.

RKUL 104 UNIVERSITY CULTURE II**(0+2), ECTS:4**

Develops general cultural knowledge, Uses critical thinking, questioning and research skills, Develops alternative solutions to different problems, Understands the importance and meaning of lifelong learning, Transfers the knowledge gained from different disciplines to life.

BIK 101 BIOCHEMISTRY**(2+0), ECTS:2**

Learn about cells, learn about amino acids, learn about peptides, learn about proteins, learn about enzymes, learn about nucleic acids, learn about carbohydrates, learn about lipids, learn about membranes, fats, vitamins

III. SEMESTER**PAT 211 CYTOTECHNOLOGY I****(2+0), ECTS: 6**

Will be knowledgeable about routine cytological techniques, will be knowledgeable about the preparation of cytological materials, will be knowledgeable about and will apply them, will be knowledgeable about the acceptance and rejection criteria of cytological materials, will be knowledgeable about and will apply the staining stages of cytological materials, will be knowledgeable about bedside evaluation practices and techniques, will be knowledgeable about the characteristics of cervical smear and will apply its techniques, will be knowledgeable about

the characteristics and techniques of breast cytology, will be knowledgeable about the characteristics and techniques of respiratory system, will be knowledgeable about thyroid cytology and will apply the fixation and PAP staining procedures of Pap smear samples. Will be able to perform direct slide smear applications. Will be able to use a centrifuge and will apply the post-centrifugation smear method. Will be able to apply Giemsa stain and perform the fixation stage of cytological materials using the air-drying method.

PAT 213 IMMUNHISTOCHEMISTRY

(2+0), ECTS:6

Students will be able to recognize and apply the staining properties and dyes of connective tissue, apply the hydration stage in the histochemical staining process, know the purposes and application procedures of trichrome staining, understand and apply the staining properties and techniques of carbohydrates, understand the properties and techniques of reticulin staining, know the properties and application methods of amyloid stain, know and apply the properties of microorganism stains, learn and apply the staining properties, stains, and staining techniques of specific structures in tissues, apply the dye fading process, know the concepts of antibody-antigen immunohistochemical methods, know and apply the hydration stage in immunohistochemical methods, understand the reaction properties of antibodies according to tumors, understand and apply immunohistochemical techniques.

PAT 207 MACROSCOPIC DISSECTION

(2+0), ECTS:5

Understands the basic information about macroscopic dissection techniques, Learns the basic concepts about the subject, Learns the stages of the macroscopy process, Learns the application of macroscopic dissection techniques, Learns and applies organ and tissue macroscopy (Breast, TAH+BSO, Intestine, Liver, Prostate, Stomach)

PAT 209 APPLICATION OF PATHOLOGY LABORATORY TECHNIQUES I (0+8),

ECTS:13

In order to reinforce and apply the theoretical knowledge learned in two semesters, they practice in private pathology laboratories or in pathology laboratory departments of public hospitals.

IV. SEMESTER

PAT 202 MOLECULAR PATHOLOGY TECHNIQUES

(2+0), ECTS: 4

Define the relationship between routine pathology and molecular pathology, Have knowledge about molecular techniques applied in the pathology laboratory, Have knowledge about the FISH method, Have knowledge about HPV type methods

PAT 206 CYTOTECHNOLOGY II

(2+0), ECTS: 4

At the end of this course, the student will learn the application of cytological techniques, identify the cells seen in cytological preparations, learn the Bethesda System in reporting cytological materials, learn and apply the techniques of breast cytology and gastrointestinal

system examination, learn the examination and application of thyroid-salivary gland cytology, learn the examination and application of CSF, sputum, urine cytology.

FIRST 101 FIRST AID

(2+0), ECTS:3

Learn and apply the basic principles of first aid, Learn to provide basic life support, Learn methods of carrying patients and injured people, Learn and apply first aid in respiratory tract obstructions, Learn first aid techniques in cases of impaired consciousness

PAT 210 FORENSIC PATHOLOGY

(2+0), ECTS: 3

Can evaluate the basic concepts of forensic medicine, Can define death in medical and legal dimensions, Gains knowledge and skills regarding corpse examination, Has information about crime scene investigation, cause of death, place and time of death, Has information about autopsy technique

PAT 200 APPLICATION OF PATHOLOGY LABORATORY TECHNIQUES II

(0+8), ECTS: 12

In order to reinforce and apply the theoretical knowledge learned during the term, they practice in private pathology laboratories or pathology laboratory departments of hospitals.