

T.C. USKUDAR UNIVERSITY
ORTHOPEDIC PROSTHETIC AND ORTHOTIC TWO-YEAR DEGREE
2020-2021

Graduates of this program will independently produce artificial extremities which functionally replace hands, arms, feet or legs (prostheses) or assistive devices (orthoses) for body parts which need to be functionally promoted, protected or corrected.

The purpose of this program is to train technicians who are able to make functional prostheses for people who have lost their upper or lower extremities for various reasons as well as durable, aesthetic and functional orthotics for decreasing pain, increasing function, mobilizing, correcting and supporting body parts in musculoskeletal and nervous system pathologies. For the production of prostheses and orthoses the technician will take measurements from the patient, make plaster casts, remodel them and finish the device and apply it to the patient by making static and dynamic alignment and adjustments.

Graduates can work in public and private hospitals with prosthetics-orthotics workshop, universities and private workshops. They have also the chance to run their own workshop. Advances in technology are constantly evolving and renewing, so need for qualified staff in this area is increasing.

According to regulations of vertical transmission quota, Associate Degree students of Vocational Schools and Distant Learning Schools can take the exam (DGS) and gain the right to enroll in undergraduate programs.

CURRICULUM

I. SEMESTER

Course Code	Course Title	Theory	Practice	Credit	ECTS
MYO101	Basic Anatomy and Physiology	3	0	3	4
OPO101	Materials Science I	2	0	2	3
OPO115	Professional Technology I	2	0	2	4
İNGU101	English I *	3	0	3	3
TURK101	Turkish Language I *	2	0	2	3
ATA101	Ataturk's Principles and Revolution. History I *	2	0	2	3
OPO119	Pattern and Modelling	2	0	2	4
RPSI209	Positive Psychology and Communication Skills	2	0	2	3
RKUL101	University Culture I	0	2	1	1
TOTAL		17	2	18	28

* Will be given in the form of distance education.

II. SEMESTER

Course Code	Course Title	Theory	Practice	Credit	ECTS
OPO116	Introduction to prosthetics	2	2	3	5
OPT128	Materials Science II	2	0	2	3
FTP213	Kinesiology	2	0	2	4
İNGU102	English II *	3	0	3	3
TURK102	Turkish Language II *	2	0	2	3
ATA102	Ataturk's Principles and Revolution. History II *	2	0	2	3
OPO132	Introduction Orthosis	2	2	3	6
OPO134	Professional Technology II	2	0	2	4
RKUL102	University Culture II	0	2	1	1
TOTAL		17	6	20	32

* Will be given in the form of distance education.

III. SEMESTER

Course Code	Course Title	Theory	Practice	Credit	ECTS
OPO207	Prosthetics I	2	4	4	8
ILK101	First Aid	2	0	2	3
OPO229	Clinical Diseases in Prosthetics and Orthotics	2	0	2	3
MET101	Professional Ethics	2	0	2	2
OPO223	Orthotics II	2	4	4	8
OPT 209	Orthotics Analysis and Assessment	2	0	2	4
TOTAL		12	8	16	28

IV. SEMESTER

Course Code	Course Title	Theory	Practice	Credit	ECTS
OPO204	Prosthetics II	2	4	4	8
MYO015	Social Responsibility Project	2	0	2	2
OPO212	Orthotics I	2	4	4	8
OPO208	Prostheses Analysis and Assessment	2	0	2	3
OPO999	Summer Internship	0	20 (WD**)	0	9
OPO224	Biomedical Technology	2	0 2	2	22
TOTAL		10	28	14	32

**WD: Work Day

TOTAL CREDIT	68
TOTAL ECTS CREDIT	120

1. CLASS I. SEMESTER

Basic Anatomy and Physiology MYO101

General definitions related to anatomy and physiology. Anatomy and physiology commonly used terms: motion system, nervous system, sensory organs, endocrine system, circulatory system, the peripheral formations.

Materials Science I OPO101

Definition and division of the materials. Material selection. Factors affecting the choice of materials. Wide range of material properties. Methods of measuring the stiffness and rigidity. Alloys material inspection methods. Formation of mineral materials and methods. Classification of steels. Hardening and normalization of metals. Prosthetics - Orthotics materials. Plasters and bandages.

Professional Technology I OPO115

Definition and classification of technology. The definition of machinery and construction machinery. Classification of instruments for measurement and control. Function elements. belts, fasteners, beds, bearings, mechanisms. Formation activities, the difference between the device and machine tools. Drills classification, properties. Helical drill and countersink. Grinding stone work considerations. Rasp, file types, care and protection. Blasted. Plunk. Screws. Dies. Morse sleeves, riveting procedures and failures. Coolants and its importance. Bearings, roller bearings.

English I INGU101

Markers; Prepositions: Place, Time, Motion, Singular and Plural Nouns: Countable and uncountable nouns; Times: tense, present continuous tense, past tense structures; Paradigms: Will, Should, Should not, Must, Must not, Can; comparative structures; Pronouns: pronouns, possessive pronouns, adjectives, positive sentences, negative sentences and interrogative sentences; Conjunctions: And, But, When, because.

Turkish Language I TURK101

What is language: the language of theories about the birth, language, culture and society relationship; Language Revolution: Turkish Language Association and the work of the World Languages: Language families of Turkish among the world languages; Turkey Turkish: Voice features, Morphology, Syntax, , Spelling, Punctuation, Correspondence: Resume, Application, letter, business letter, telegram.

Atatürk's Principles and History of Turkish Revolution I ATA101

The Ottoman Empire Order and Reforms in the Ottoman Empire and Fall of the Disruption; Anatolia, Mustafa Kemal Pasha, Organization of National Struggle Opening of the First Parliament, Military and Political Developments Between 1920-1922, Revolution and Counter reactions; Constitutional System; Republican Era Domestic and International Politics of the Turkish Revolution, Basic Characteristics and Intellectual Movements, Law, Education, Economy, and Social Life; Atatürk's Principles and General Characteristics of these principles; Evaluation of Kemalism from an ideological perspective.

Pattern and Modelling OPO119

Drawing tools and supplies. Line and writing norms. Design, geometry. Coordinates, planes. Standard views. Designs in a variety of materials planes. Perspectives.

University Culture I RKUL101

The annual program is announced in each academic year. The student will attend 6 selected conferences, seminars and panels. They note on the reports about the those activities.

Positive Psychology and Communication Skills RPSI209

Definitions and Basic Concepts of Positive Psychology, Theoretical Foundations of Positive Psychology, Theoretical Foundations of Positive Psychology Social Cognitive Neuro-science-cerebral Infrastructure Introduction of Social Behavior, Positive Psychology in Practice-Emotional Intelligence -, Childre adult and Youth, Marriage and Emotional Intelligence in Business (Life), Self-Recognition and Awareness, Recognition of others and empathy, Communication Skills, Motivation and Planning, Problem Solving Skill, Anger, Aggression and Violence, Relationship Management, Adherence, Healthy Decision Making, Conciliation.

1. CLASS II. SEMESTER

Introduction to Prosthetics OPO116

Causes and levels of lower-extremity amputation. Partial foot prostheses. Lower limb prostheses. Above-knee prosthesis. Hip prostheses. Causes and levels of upper-limb amputation. Upper limb prostheses. Hand and wrist, below elbow and above elbow prostheses. Shoulder disarticulation prostheses.

Materials Scicence II OPO128

Materials used in the upper limb prostheses. Hands, wrist units. Elbow, elbow joints. The materials used in lower extremity prosthetics. Knee, hip joints and other materials. Measure used to receive materials. Chemical reactions. Lamination. Plastics, wood, glue. Oxygen. acetylene. Orthotic

materials, corrosion workshop tools and equipment used. Materials necessary for the safety and prevent accidents at work.

Kinesiology FTP213

Introduction to kinesiology. Biomechanical principles. Bone structure and properties. Muscle and joint mechanics. Kinesiology of spinal column. Scoliosis. The mechanics of the pelvis. Normal and pathological gait. Hip and knee joint mechanics. The foot, ankle and shoulder complex. Kinesiology the elbow joint of the hand.

English II INGU102

Time: Present tense, past tense, past tense, future tense structures; Modes: Might, Could, Can, Must, May, Envelopes: Location, Direction, Purpose, adverbs, adjectives: Order of adjectives, Comparative, Superlative forms; passive Structure: Current, Wide, The Past, the Future also passive voice; Conditionals; Adjective Clauses, Relative Clauses; Verb Structures: to,-ing, noun clauses; Adverbial Clauses; Comparative Constructions.

Turkish Language II TURK102

The right to use their native language for gaining the skills that the students who come to college in gaining skills in order to enhance the ability of producing ideas and thinking in this area is based on the course of writing, punctuation, and spelling rules, rules of composition, writing exercises related to these types of writing are discussed and examples. In addition, various novels, poetry books and plays are read and discussed. Reading plays in the classroom, a variety of techniques and diction lessons are applied stress and intonation.

Atatürk's Principles and History of Turkish Revolution II ATA102

The Ottoman Empire Order and Reforms in the Ottoman Empire and Fall of the Disruption; Anatolia, Mustafa Kemal Pasha, Organization of National Struggle Opening of the First Parliament, Military and Political Developments Between 1920-1922, Revolution and Counter Reactions; Constitutional System; Republican Era Domestic and International Politics of the Turkish Revolution, Basic Characteristics and Intellectual Movements, Law, Education, Economy, and Social Life; Atatürk's Principles and General Characteristics of these principles; Evaluation of Kemalism from an ideological perspective.

Introduction Orthotics OPO132

Classic AFO'S and components, leg length discrepancy devices. Situations that require KAFO, components of KAFO. Hip dislocation devices. .

Professional Technology II OPO134

Source Definition, classification, oxyacetylene welding safety measures carbide boilers, welding machines, the current settings. Definition and classification of lathe, grinding, sharpening the objectives and rules to be followed, job security. Towing procedures lathe taper. Turning bars with the pen. The end points of the data items. Pins, wedges, boring and reaming varieties. Tolerances. Grinding wheels and classification. Grinding and milling methods.

University Culture II RKUL102

The annual program is announced in each academic year. The student will attend 6 selected conferences, seminars and panels. They note on the reports about the those activities.

2. CLASS III. SEMESTER

Prosthetics I OPO207

Partial foot prostheses. Syme prostheses. Below-knee prostheses. Above-knee prostheses. Knee and hip disarticulation prostheses. Taking measurements, modeling, machining, and finishing and making settings.

First Aid ILK101

First aid: Importance rules. Disaster situations in the society, Causes. Civil defense. Injuries, bleeding and shock first aid. First aid on the respiratory and circulatory system. Vertebral fractures, first aid limb, head, chest first aid forties. Rescue and transport methods. Burns, electric shock, freezing, food and chemical poisoning first aid. Dislocations, sprains, cramps first aid. Insect bites first aid.

Orthotics I OPO223

Foot deformities, splinting of foot deformities. Epin cushion. Hallux valgus. Insoles. Transverse arch supplements. Lateral wedges. Molding. Modelling. Lamination. Ankle-Foot Orthosis (AFO) , Knee-Ankle-Foot Orthosis (KAFO).

Orthotics Analysis and Assessment OPO221

Cervical orthoses. Thoraco - lumbar orthosis types. Orthotics in rheumatic diseases. Spastic orthotics. Orthotics evaluation and control. Orthotics evaluation forms. Gait disturbances due to orthosis.

Clinical Diseases in Prosthetics and Orthotics OPO229

Rheumatic diseases and complications of fractures. Bone infections and tumors. Congenital anomalies. Peripheral vascular diseases. Spinal Cord Injuries. Pyramidal and extrapyramidal system diseases. Cerebellar system disorders. Muscular dystrophies. Polyneuritis. Peripheral nerve injuries.

Professional Ethics MET101

What is deontology, Definition and Introduction, What is Morality, Moral Mature Properties of the Individual, Concepts of Health and Illness, What Is a Profession; Fundamental Principles of the Profession. Teamwork, Health Professionals in Society, the Universal Declaration of Human Rights, Patient Rights, Health Law and Related Regulations, Euthanasia, Ethics in transplantation.

2. CLASS IV. SEMESTER

Prosthetics II OPO204

Prosthetic hands. Below elbow prostheses. Taking measurements, modeling, machining, casting, connection and finishing. modeling, machining, casting, and end the connection. Forequarter, the end. processing, molding, finish. Shoulder Elbow prostheses, taking measurements, taking measurements, modeling, machining, casting, and end the connection.

Orthotics II OPO212

Knee Brace. Thomas device. Knee orthoses. Static elbow splints. Static wrist splints. Wrist contracture orthosis. Radial palsy splint. Short opponens splint. Thumb opposition splints. Finger splints.

Analysis and Evaluation of Prosthetics OPO208

Prosthetic evaluation and assessment. Gait disturbances due to prosthesis. Early stage prosthetic applications. Myoelectric prostheses. Prosthetics for congenital abnormalities. Hip disarticulation prostheses, hindquarter prostheses.

Summer Internship OPO999

Taking measurement from the patient and finishing an orthosis or prosthesis according to it during 20 work days.

Biomedical Technology OPO224

Definition of biomedical technology. Electrical currents. Magnetism. Electrical power sources, generators. Direct current and alternating current. Electromagnetism. Resistor, capacitor self coils, transformers, and their use in electrical circuits. Electrical energy use in medical devices. The dangers of electrical current and its prevention. Rectifiers. Vacuum lamps. Secondary conductors. Faults that may occur in electric powered devices. Small repairs that can be done by users. Biomedical application of the technology. Central systems in health care facilities.

Social Responsibility Project MYO015

University students are participative and democratic individuals, solidarity and strengthening cooperation, design and social service projects they will use their knowledge and creativity in various projects of social responsibility by applying, the provision of voluntary participation in civil society organizations.