TUKMOS

SYSTEM OF SPECIALTY BOARD IN MEDICINE FOR SETTING THE SCHEDULE AND DEFINING THE STANDARDS

ORTHOPAEDICS AND TRAUMATOLOGY
Core Schedule of Specialization Education

04.06.2013

TABLE OF CONTENTS

1. INTRODUCTION ERROR! BOOKMARK NOT DEFINED.

2. SCHEDULE PRESENTATION ERROR! BOOKMARK NOT DEFINED.

3. CORE COMPETENCIES ERROR! BOOKMARK NOT DEFINED.

3.1. Director **6**

3.2. Team Member **6**

3.3. Health Protector **6**

3.4. Communicator Error! Bookmark not defined.

3.5. Value and Responsibility Owner Error! Bookmark not defined.

3.6. Learner and Teacher **6**

3.7. Service Provider **6**

3.7.1. CLINICAL COMPETENCIES **Error! Bookmark not defined.**

3.7.2. INTERVENTIONAL COMPETENCIES **Error! Bookmark not defined.**

4. METHODS OF LEARNING AND TEACHING ERROR! BOOKMARK NOT DEFINED.

4.1. Structured Education Activities (SA) **17**

4.1.1. Presentation **Error! Bookmark not defined.**

4.1.2. Seminar **Error! Bookmark not defined.**

4.1.3. Case debate **Error! Bookmark not defined.**

4.1.4. Article debate **Error! Bookmark not defined.**

4.1.5. File debate **Error! Bookmark not defined.**

4.1.6. Council **Error! Bookmark not defined.**

4.1.7. Course **Error! Bookmark not defined.**

4.2. Applied Education Activities (AA) **19**

4.2.1. Inpatient care **Error! Bookmark not defined.**

4.2.2. Outpatient care **Error! Bookmark not defined.**

4.3. Independent Learning Activities by Discovery (IA) **20**

4.3.1. Inpatient follow-up **Error! Bookmark not defined.**

4.3.2. Outpatient/Material follow-up 20

4.3.3. Peer learning **Error! Bookmark not defined.**

4.3.4. Literature reading **Error! Bookmark not defined.**

4.3.5. Research **Error! Bookmark not defined.**

4.3.6. Teaching **Error! Bookmark not defined.**

5. EDUCATION RESOURCES **21**

6. ASSESSMENT AND EVALUATION ERROR! BOOKMARK NOT DEFINED.

7. REFERENCES ERROR! BOOKMARK NOT DEFINED.

1. INTRODUCTION

Speciality of Orthopaedics and Traumatology involves the diagnosis and treatment of the congenital diseases, acquired diseases and injuries of bones, joints and soft tissues which form the skeletal system. Treatment plan is made by assessing the patient's story, physical examination and laboratory investigations. During the specialization; not only surgery but also protective treatment methods, pharmacologic treatment, orthesis and prosthesis applications and physical therapy and rehabilitation educations are provided.

Orthopaedics and Traumatology is related to other specialization branches with several aspects. For the diagnosis and treatment of various diseases, cooperation with General Surgery, Plastic and Reconstructive Surgery, Anaesthesiology and Reanimation, Radiology, Physical Medicine and Rehabilitation, Neurology, Neurosurgery, Paediatrics, Internal Medicine, Rheumatology, Geriatrics, Sports Medicine, Marine and Underwater Medicine and other branches is needed.

Orthopaedics and Traumatology education consist of these:

Anatomic compartments: All aspects of the diagnosis and treatment of the diseases belong to bones, joints and soft tissues of upper and lower extremities, intervertebral disc, vertebra and pelvis,

Treatment of the acute and chronicle diseases: Diagnosis and treatment methods of acute trauma, infectious diseases, neurovascular injury, neuromotor and metabolic bone diseases, congenital abnormalities, benign and malign tumors of the bone and soft tissues,

Clinical subjects related to educational field: Imaging of the muscle and skeletal systems, commenting on the laboratory tests, orthesis and prosthesis knowledge, information on neurologic and rheumatologic diseases, medical ethics and forensic medicine applications.

Research: Clinical, experimental and /or laboratory researches.

Fundamental sciences: It must include education on anatomy, biochemistry, biomaterials, biomechanics, microbiology, pathology, physiology and on the other fundamental sciences related to our field.

2. SCHEDULE PRESENTATION

2.1. Aim and objectives of the schedule

Entitle the specialization students who are coming through this field to diagnosis and treatment of the muscle-skeletal system disorders and traumatology, turn them into a good practitioners regarding medical ethics. Help our young colleagues to gain and improve the knowledge, skills and manners which will be necessary in their professional life. To be able to reach this aim,

a. Surgical or non surgical education opportunities must be provided on all fields of the Orthopaedics and Traumatology,

b. It must be assisted to improve learning and research skills regarding technical, cognitive and communication, during the education.

c. Skills of creating new knowledge and criticising given information must be provided,

d. Ethical and deontological manners must be improved.

2.2. Historical Process of the Schedule Study

Turkish Council for Orthopaedics and Traumatology Education (TOTEK) was established in 2001 under the Association of Turkish Orthopaedics and Traumatology Union (TODBİD) . TOTEK started to work on a "schedule of core education" which will constitute a basis for education of the assistant doctors from 2002 and studies continued in periods. The draft prepared in the period of 2001-2003 was a complete adaption of the program prepared by UEMS, European Union of Medical Specialists. A joint meeting was held with "commission of education-schedule" which was a commission formed under the Ministry of Health, it was presented to Prof. Sefa Kapıcıoğlu who was head of the commission and a member of TOTEK on that time. This first draft was completed as a more detailed programme by contribution of the subspecialty associations and it has been sent to education clinics. It has been put into practise by some educational clinics. Both core schedule and assistant report cards could not be put into practise commonly due to inability of TOTEK to impose sanction.

At the end of the year 2009, MoH General Directorate on Education set up commissions for education schedule for all branches as a necessity of the specialty bylaws. Prof Dr Mümtaz Alpaslan was elected as chairman among members of the commission for orthopaedics in January 2010 meeting in Antalya and studies have been started on the basis of the Schedule prepared by TOTEK. After the Antalya meeting, when they performed studies together or alone, members of the commission have experienced the difficulty and even impossibility of putting these headlines under the format provided by ministry of health. Thereupon, commission came together in Ankara again and make a new assignment; tasks and teams were determined again. Task analysis and determining the learning objectives were handed over to the commission members. In the June 2011, during the meeting in Ankara after invitation of MoH General Directorate on Education, task analysis and objectives of the task duties and groups determined in the subject headlines, were determined and processed on to the software by members and the first step of the studies on determining the schedule was completed.

In May 2012 TUKMOS Orthopaedics and Traumatology commission came together in Ankara Kızılcahamam, clinical and interventional competencies were determined and level coding was performed. In July, same year, schedule presentations were performed in the four clinics (Hacettepe University, Afyon Kocatepe University Medical Faculty, Sakarya University, Ministry of Health Dışkapı Education and Research Hospital) determined by TUK and introduced to notify any malfunction during application. Feedbacks were assessed and added to core schedule by TUK in the meeting in October 2012, Ankara.

At the end, 2.0 version of the core schedule was given shaped at the meeting on 8 April 2013, Ankara.

2.3. Process of Specialization Education

Duration of the specialization education of orthopaedics and traumatology is 5 years. During this time period,

a) At least 12 months of adult orthopaedics field
b) At least 12 months of adult trauma field
c) At least 12 months of paediatrics orthopaedics and trauma field
d) At least 6 months of working is obliged to work in the other fields of orthopaedics.

Unless specialization student could meet these conditions in the education program which he/she subjects to, it is necessary to send the student to another education institute for job rotation for enough duration.

Rotations must be done in other branches according to bylaws are:

In the first year

1) General surgery: 1 month duration, emergency applications and trauma predominantly.

2) Emergency Medicine: 2 months duration

In the second learning year

3) Anaesthesiology and reanimation: 2 months duration, 1 month anaesthesiology and 1 month reanimation unite

4) Physical Medicine and Rehabilitation: 1 month duration

In the third learning year

5) Plastic and Reconstructive Surgery: 2 months duration

6) Cardiovascular Surgery: 1 month duration, intended at peripheral vascular surgery

Specialization student performs dissertation studies in accordance with bylaw.

Complete the fundamental courses and examinations advised by TODBİD. At the end of education period, sit in the exit exams.

2.4. Career Opportunities

Physician who got the title of orthopaedics and traumatology specialist become entitled to manage an inpatient clinic alone. However, to be able to utilize this title in Turkey, it is necessary to carry out obligatory service first. After the obligatory service, physicians can perform their profession in states or private institutions or as self-employed.

After the specialization on Orthopaedics and Traumatology, it is possible to take sub-speciality exam for hand surgery and become a subspecialist. Moreover, with 2 years of education in the department of sports medicine, it is possible to become a sports medicine specialist.

3. CORE COMPETENCIES

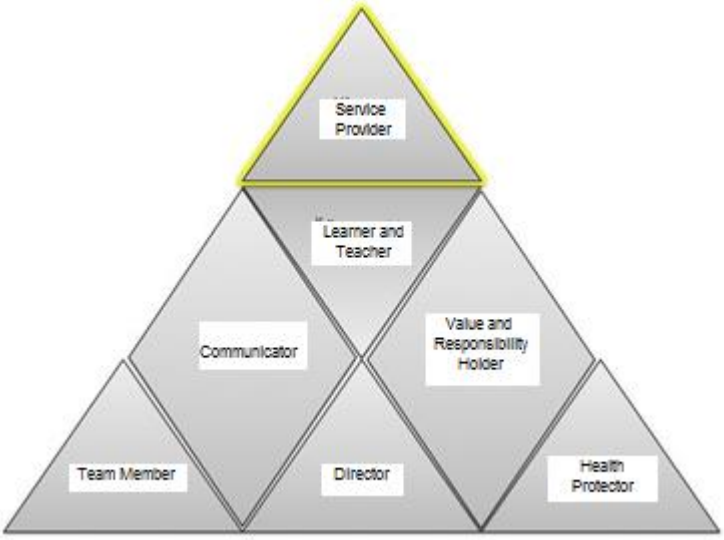


Figure 1- Competency tirangle of TUKMOS (seven fundamental competency subjects.)

Competency is the sum of knowledge, skills, manners and behaviours which is crucial to perform a work or process in a required way, is possible to gain and improve by education and learning, is measurable and observable and which has the predefined properties. Competencies were gathered in 7 fundamental field.

Every single competency represents a different role of specialist (Figure-1). Competencies belong to seventh fundamental subject, service provider, were divided into two, clinical competencies and interventional competencies. Competencies which form the Service Provider are directly related to health service providing and they cannot be used or find true meaning without other 6 fundamental competencies. In another words, competencies in 6 fundamental subjects are required to gain for specialist to effectively use the competency on "Service Provider" in social environment, patient and community centred. It is possible to talk about sufficiency when these competences belong to 7 fundamental subjects were used in a harmony. These fundamental competency subjects were listed below;

3.1. Director

3.2. Team Member

3.3. Health Protector

3.4. Communicator

3.5. Value and Responsibility Holder

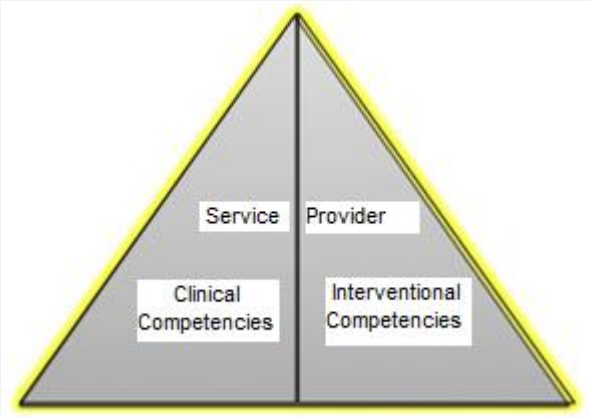
3.6. Learner and Teacher

3.7. Service Provider

Competencies in the fundamental subject of ***Service Provider*** were divided into two according to their usage:

Clinical Competency: Ability of using knowledge, personal, social and/or methodological skills on medical decisions;

Interventional Competency: Ability of using knowledge, personal, social and/or methodological skills on medical interventions.



Process of gaining and applying clinical and interventional competencies must be in accordance with the other competencies indicated at fundamental competency subjects and it must ease the decision processes specific to specialisation.

Figure 2- Seventh fundamental competency field of TUKMOS: *Service Provider*

3.7.1. CLINICAL COMPETENCIES

Specialist physician applies the clinical competencies listed below and all the fundamental competencies which is gained during his/her education, simultaneously and properly.

	CLINICAL COMPETENCY	Level	Seniority	Method
SKELETAL DYSPLASIA	ALL SKELETAL DYSPLASIA	B	2	SA,AA,IA
HEMATOPOIETIC DISORDERS	TÜM HEMATOPOIETIC DISORDERS	B	2	SA,AA,IA
METABOLIC DISORDERS	RICKETS	T,K	2	SA,AA,IA
	OSTEOGENESIS IMPERFECTA	T,A	2	SA,AA,IA
	CONNECTIVE TISSUE DISORDERS	B	2	SA,AA,IA
	OTHER METABOLIC BONE DISORDERS	B	2	SA,AA,IA
SYNOVIAL JOINT DISORDERS	RHEUMATOID ARTHRITIS	T,A	2	SA,AA,IA
	JRA	T,A	2	SA,AA,IA
	ANKYLOSING SPONDYLITIS	B	2	SA,AA,IA
	ARF	T,A	2	SA,AA,IA
	TRANSIENT SYNOVITIS	TT	1	SA,AA,IA
	GOUT	T, A	2	SA,AA,IA
	OTHER INFLAMMATORY JOINT DISORDERS	B	2	SA,AA,IA
	HAEMOPHILIC ARTHROPATHY	T, A	2	SA,AA,IA
NEUROMUSCULAR DISORDERS	CEREBRAL PALSY	TT	2	SA,AA,IA
	POLIO SEQUELAS	TT	2	SA,AA,IA

	CLINICAL COMPETENCY	Level	Seniority	Method
	ARTHROGRYPOTIC SYNDROMES	B	2	SA,AA,IA
	MYELODYSPLASIAS (SPINA BIFIDA)	B	2	SA,AA,IA
	MUSCULAR DYSTROPHIES	B	2	SA,AA,IA
	MUSCULAR TORTICOLLIS	TT	1	SA,AA,IA
	ENTRAPMENT NEUROPATHIES	TT	2	SA,AA,IA
	BRACHIAL PLEXUS PALSY	T	2	SA,AA,IA
DEVELOPMENTAL AND CONGENITAL DISEASES	DDH	TT, K	2	SA,AA,IA
	CONGENITAL COXA VARA	T	2	SA,AA,IA
	PFFD	B	2	SA,AA,IA
	GENU VALGUM - VARUM	TT	2	SA,AA,IA
	TIBIAL BOWING-CTP	TT	2	SA,AA,IA
	LEG LENGTH DISCREPANCY	TT	2	SA,AA,IA
	PES EQUINOVARUS	TT	2	SA,AA,IA
	TOE ABNORMALITIES	TT	2	SA,AA,IA
	TARSAL COALITION	TT	2	SA,AA,IA
	PES CALCANEOVALGUS	TT	2	SA,AA,IA
	METATARSUS ADDUCTUS	TT	1	SA,AA,IA
INFECTIONS	ACUT HEMATOGEN OSTEOMYELITIS	TT,A,K	1	SA,AA,IA
	SEPTIC ARTHRITIS	T, A, K	1	SA,AA,IA

	CLINICAL COMPETENCY	Level	Seniority	Method
	CHRONIC OSTEOMYELITIS	T, A	2	SA,AA,IA
	TUBERCULOSIS INFECTIONS	B	2	SA,AA,IA
	NON TUBERCULOSIS SPESIFIC INFECTIONS	B	2	SA,AA,IA
MUSCLE AND SKELETAL SYSTEM TUMORS	BENIGN SOFT TISSUE TUMORS	TT	1	SA,AA,IA
	MALIGN SOFT TISSUE TUMORS	T	2	SA,AA,IA
	PRIMARY BENIGN BONE TUMORS	TT	2	SA,AA,IA
	PRIMARY MALIGN BONE TUMORS	T	2	SA,AA,IA
	METASTATIC BONE TUMORS	T, A, K	2	SA,AA,IA
	TUMOR LIKE PATHOLOGIES	T	2	SA,AA,IA
OVERUSE DISORDERS	CHRONIC COMPARTMENT SYNDROME	TT	2	SA,AA,IA
	STRESS FRACTURES	TT	1	SA,AA,IA
	TENDINITIS	TT	1	SA,AA,IA
MUSCLE AND SKELETAL SYSTEM TRAUMAS AND COMPLICATIONS	POLYTRAUMA	TT,A	2	SA,AA,IA
	FIRE GUN INJURIES	TT,A	2	SA,AA,IA
	OPEN FRACTURES	TT	2	SA,AA,IA
	ACUTE COMPARTMENT SYNDROMES	TT,K,A	1	SA,AA,IA
	CRUSH INJURY	TT,A	2	SA,AA,IA
	EPIPHYSIOLYSIS	TT,A	2	SA,AA,IA
	COMPLEX REGIONAL PAIN SYNDROME	TT	2	SA,AA,IA

	CLINICAL COMPETENCY	Level	Seniority	Method
	MUSCLE INJURIES	TT	2	SA,AA,IA
	NONUNION	TT	2	SA,AA,IA
	MALUNION	TT	2	SA,AA,IA
	SPINAL CORD INJURIES	T,A,	2	SA,AA,IA
	UPPER CERVICAL INJURIES	TT, A	2	SA,AA,IA
	LOWER CERVICAL INJURIES	TT, A	2	SA,AA,IA
	THORACIC VERTEBRAE INJURIES	TT, A	2	SA,AA,IA
	LUMBAR VERTEBRAE INJURIES	TT, A	2	SA,AA,IA
	SACRUM INJURIES	TT, A	2	SA,AA,IA
	PELVIC INJURIES	TT, A	2	SA,AA,IA
	ACETABULUM INJURIES	T, A, K	2	SA,AA,IA
	TRAUMATIC HIP DISLOCATIONS	TT	2	SA,AA,IA
	FEMORAL HEAD FRACTURES	TT	2	SA,AA,IA
	FEMORAL NECK FRACTURES	TT	2	SA,AA,IA
	TROCHANTERİC FEMUR FRACTURES	TT	2	SA,AA,IA
	FEMORAL DIAPHYSEAL FRACTURES	TT	2	SA,AA,IA
	DISTAL FEMUR FRACTURES	TT	2	SA,AA,IA
	KNEE DISLOCATIONS	TT, A, K	2	SA,AA,IA
	PATELLAR FRACTURES	TT,A	2	SA,AA,IA

	CLINICAL COMPETENCY	Level	Seniority	Method
	UPPER TIBIAL FRACTURES	TT,A	2	SA,AA,IA
	DIAPHYSEAL TIBIAL FRACTURES	TT,A	2	SA,AA,IA
	LOWER TIBIAL FRACTURES	TT,A	2	SA,AA,IA
	ANKLE FRACTURES	TT,A	2	SA,AA,IA
	ANKLE LIGAMENT INJURIES	TT,A	1	SA,AA,IA
	TALUS FRACTURES	TT,A	2	SA,AA,IA
	CALCANEAL FRACTURES	TT,A	2	SA,AA,IA
	LISFRANC INJURIES	TT,A	2	SA,AA,IA
	OTHER FOOT FRACTURES	TT,A	2	SA,AA,IA
	STERNOCLAVICULAR JOINT DISLOCATIONS	TT,A	1	SA,AA,IA
	CLAVICLE FRACTURES	TT,A	2	SA,AA,IA
	ACROMIOCLAVICULAR JOINT DISLOCATION	TT,A	2	SA,AA,IA
	SHOULDER DISLOCATION	TT,A	2	SA,AA,IA
	PROXIMAL HUMERAL FRACTURES	TT,A	2	SA,AA,IA
	DIAPHYSEAL HUMERUS FRACTURES	TT,A	2	SA,AA,IA
	DISTAL HUMERAL FRACTURES	TT,A	2	SA,AA,IA
	OLECRANON FRACTURES	TT,A	2	SA,AA,IA
	RADIAL HEAD FRACTURES	TT,A	2	SA,AA,IA
	CORONOID KIRIKLARI	TT,A	2	SA,AA,IA

	CLINICAL COMPETENCY	Level	Seniority	Method
	ELBOW DISLOCATIONS	TT,A	2	SA,AA,IA
	DIAPHYSEAL FOREARM FRACTURES	TT,A	2	SA,AA,IA
	WRIST FRACTURES	TT,A	2	SA,AA,IA
	CARPAL INJURIES	TT,A	2	SA,AA,IA
	HAND AND FINGER INJURIES	TT,A	2	SA,AA,IA
HIP DISORDERS	HIP JOINT OSTEOARTHROSIS	TT	2	SA,AA,IA
	FEMORAL HEAD AVASCULAR NECROSIS	TT	2	SA,AA,IA
	ACETABULAR DYSPLASIZ	T	2	SA,AA,IA
	FEMOROACETABULAR IMPINGEMENT SYDROME	T	2	SA,AA,IA
	SLIPPED CAPITAL FEMORAL EPIPHYSIS	T,K	2	SA,AA,IA
	PERTHES	TT	2	SA,AA,IA
KNEE JOINT DISEASES	LIGAMENT INJURIES OF THE KNEE JOINT	T, A	2	SA,AA,IA
	MENISCUS INJURY OF THE KNEE JOINT	TT	2	SA,AA,IA
	CARTILAGE INJURY OF THE KNEE JOINT	TT	2	SA,AA,IA
	PATELLOFEMORAL JOINT PROBLEMS	TT	2	SA,AA,IA
	OSTEOARTHROSIS OF THE KNEE JOINT	TT	2	SA,AA,IA
SHOULDER KNEE DISORDERS	CHRONIC SHOULDER INSTABILITY	T	2	SA,AA,IA
	ROTATOR CUFF DISORDERS	T	2	SA,AA,IA
	BICEPS TENDON PROBLEMS	T	2	SA,AA,IA

	CLINICAL COMPETENCY	Level	Seniority	Method
	SHOULDER IMPINGEMENT SYNDROME	T	2	SA,AA,IA
	FROZEN SHOULDER	T	2	SA,AA,IA
	SHOULDER JOINT OSTEOARTHROSIS	T	2	SA,AA,IA
	ELBOW EPICONDYLITIS	TT	1	SA,AA,IA
	ELBOW INSTABILITY	T	2	SA,AA,IA
	ELBOW JOINT OSTEOARTHROSIS	T	2	SA,AA,IA
FOOT AND ANKLE DISORDERS	CONGENITAL FLEXIBLE PES PLANOVALGUS	TT	1	SA,AA,IA
	ACQUIRED PES PLANUS	T	2	SA,AA,IA
	PES CAVUS	TT	2	SA,AA,IA
	HALLUX VALGUS	TT	2	SA,AA,IA
	HALLUX RIGIDUS	TT	2	SA,AA,IA
	SMALL FINGER OF THE FOOT DEFORMITIES	TT	2	SA,AA,IA
	METATARSALGIA	TT	2	SA,AA,IA
	HEEL PAIN	TT	1	SA,AA,IA
	RUPTURE OF ACHILLES TENDON	TT	2	SA,AA,IA
	ACHILLES TENDINOPATHY	TT	2	SA,AA,IA
	PERONEAL TENDON INJURIES	TT	2	SA,AA,IA
	CHRONICLE ANKLE INSTABILITY	T	2	SA,AA,IA
	CARTILAGE INJURIES OF THE ANKLE	TT	2	SA,AA,IA

	CLINICAL COMPETENCY	Level	Seniority	Method
	OSTEOARTHROSIS OF THE ANKLE	T	2	SA,AA,IA
	TARSAL TUNNEL SYNDROME	TT	2	SA,AA,IA
	DIABETIC FOOT PROBLEMS	TT	2	SA,AA,IA
	FOOT NAIL PROBLEMS	TT	2	SA,AA,IA
SPINAL DISEASES	SPONDYLOLYSIS	TT	2	SA,AA,IA
	SPONDYLOLISTHESIS	TT	2	SA,AA,IA
	SPONDYLARTHROSIS	TT	2	SA,AA,IA
	SPINAL STENOSIS	TT	2	SA,AA,IA
	CERVICAL DISCOPATHY	TT	2	SA,AA,IA
	THORACIC DISCOPATHY	TT	2	SA,AA,IA
	LUMBAR DISCOPATHY	TT	2	SA,AA,IA
	SCOLIOSIS	TT	2	SA,AA,IA
	SAGITTAL PLAN DEFORMITIES	TT	2	SA,AA,IA

3.7.2. INTERVENTIONAL COMPETENCIES

Specialist physician applies the interventional competencies listed below and all the fundamental competencies which is gained during his/her education, simultaneously and properly.

	INTERVENTIONAL COMPETENCY	Level	Seniority	Method
GENERAL TRAUMATOLOGY APPLICATIONS	TO BE ABLE TO OPEN AIRWAY AND ENDOTRACHEAL INTUBATION	2	1	SA,AA
	TO BE ABLE TO APLLY TUBE FOR PNEUMO-HEMOTHORAX	2	1	SA,AA

	INTERVENTIONAL COMPETENCY	Level	Seniority	Method
	FUNDAMENTAL INTENSIVE CARE KNOWLEDGE AND SKILLS (FLUID AND SHOCK THERAPY)	3	1	SA,AA,IA
	PREVENTION AND TREATMENT OF THE COMPLICATIONS LIKE THROMBOSIS AND INFECTION	4	1	SA,AA,IA
	TREATMENT OF THE COMPARTMENT SYNDROMES	4	1	SA,AA,IA
GENERAL PATIENT ASSESSMENT	SYSTEMIC EXAMINATION	4	1	SA,AA
GENERAL ORTHOPAEDIC APPLICATIONS	BANDAGE APPLICATIONS	3	2	SA,AA,IA
	SPLINT APPLICATIONS	3	2	SA,AA,IA
	PLASTER CAST APPLICATIONS	3	2	SA,AA,IA
	TRACTION APPLICATION	3	2	SA,AA,IA
	JOINT PUNCTURE AND INJECTIONS.	3	2	SA,AA,IA
	SOFT TISSUE PUNCTURE AND INJECTIONS.	3	2	SA,AA,IA
	LOCAL ANESTHESIA APPLICATIONS.	3	2	SA,AA,IA
	FUNDAMENTAL SURGICAL APPLICATIONS.	4	1	SA,AA
	SOFT TISSUE DEBRIDEMENT	4	1	SA,AA
	BONE TISSUE DEBRIDEMENT	3	2	SA,AA
	VASCULARISED GRAFT APPLICATIONS	1	2	SA,AA
	PAINFUL CONDITIONS (MUSCLE SPASMS, CALCIFIC TENDINITIS, NERVE COMPRESSIONS, ETC.)	4	2	SA,AA,IA
	ARTHRODESIS APPLICATIONS	3	2	SA,AA,IA

	INTERVENTIONAL COMPETENCY	Level	Seniority	Method
	AMPUTATIONS	3	2	SA,AA
PEDIATRIC ORTHOPAEDIC APPLICATIONS	PROTECTIVE TREATMENTS OF THE CONGENITAL DEFORMITIES	3	2	SA,AA,IA
	SURGICAL TREATMENTS OF THE CONGENITAL DEFORMITIES.	2	2	SA,AA,IA
SPINAL SURGERY APPLICATIONS	APPROACH TO BACK PAINS	3	2	SA,AA,IA
	SPINAL DEFORMITY FOLLOW-UP	3	2	SA,AA,IA
	TREATMENT OF THE DEGENARATIVE SPINAL DISEASES.	3	2	SA,AA,IA
	TREATMENT OF THE TRAUMATIC SPINAL DISEASES.	3	2	SA,AA,IA
	TREATMENT OF THE SPINAL INFECTION	3	2	SA,AA,IA
	TREATMENT OF OSTEOPOROSIS	3	2	SA,AA,IA
	TREATMENT OF SPINAL DISEASES	3	2	SA,AA,IA
ARTHROPLASTY APPLICATIONS	UPPER LIMB ARTHROPLASTY APPLICATIONS	3	2	SA,AA,IA
	LOWER LIMB ARTHROPLASTY APPLICATIONS	3	2	SA,AA,IA
ARTHROSCOPY AND SPORTS TRAUMATOLOGY APPLICATIONS	UPPER LIMB ARTHROSCOPY APPLICATIONS	3	2	SA,AA,IA
	LOWER LIMB ARTHROSCOPY APPLICATIONS	3	2	SA,AA,IA
	EXERCISE APPLICATIONS	3	2	SA,AA,IA
ORTHOPAEDİC ONCOLOGY APPLICATIONS	BENIGN SOFT TISSUE TUMOR RESECTION	2	2	SA,AA,IA
	MALIGN SOFT TISSUE TUMOR RESECTION	2	2	SA,AA,IA
	BENIGN BONE TISSUE TUMOR RESECTION	2	2	SA,AA,IA

	INTERVENTIONAL COMPETENCY	Level	Seniority	Method
	MALIGN BONE TISSUE TUMOR RESECTION	2	2	SA,AA,IA
	TREATMENT OF THE ACUTE COMPLICATIONS OF TUMORS	2	2	SA,AA,IA
FOOT AND ANKLE SURGERY APPLICATIONS	PROTECTIVE APPLICATIONS	3	2	SA,AA,IA
	SURGICAL APPLICATIONS	3	2	SA,AA,IA
HAND SURGERY APPLICATIONS	PROTECTIVE APPLICATIONS	3	2	SA,AA,IA
	NON MICRO SURGICAL APPLICATIONS	3	2	SA,AA,IA
ORTHOPAEDİC TRAUMATOLOGY APPLICATIONS	CLOSED REDUCTION AND PROTECTIVE TREATMENT OF THE FRACTURES IN ANY AGE	3	2	SA,AA
	SURGICAL REDUCTION AND TREATMENT OF THE FRACTURES IN ANY AGE	3	2	SA,AA
	CLOSED REDUCTION AND PROTECTIVE TREATMENT OF THE DISLOCATIONS IN ANY AGE	3	2	SA,AA
	SURGICAL REDUCTION AND TREATMENT OF THE DISLOCATIONS IN ANY AGE	3	2	SA,AA
	SURGICAL TREATMENT OF INTRA-ARTICULAR FRACTURES	3	2	SA,AA
	SURGICAL TREATMENT OF THE OPEN FRACTURES	3	2	SA,AA

4. METHODS OF LEARNING AND TEACHING

Methods of learning and teaching advised by TUKMOS were divided into three: "**Structured Education Activities" (SA), "Applied Education Activities" (AA)** and **"Independent Learning Activities by discovery" (IA).**

4.1. Structured Education Activities (SA)

4.1.1. Presentation

Expressing a subject by using visual and audio facilities. Generally, it is used about recent developments on the rare or very rarely seen topics/conditions. In this method, instructor represent about a subject which is missing by the student or which student was so passive. Presentation could be interactive or non-interactive.

4.1.2. Seminar

Experienced person explains a subject related to Orthopaedics and Traumatology, with benefit from his/her experiences and the subjects are covered with reciprocal questions and answers. The difference from the presentation is audiences could interact with speaker regarding their experiences. Seminar is an educational method which involves intense dialogs, shares experiences without judgement and people from different levels can complete the missing part with questions from different aspects.

4.1.3. Case debate

It is a small group education activity which is mentioned about one case or several cases. The aims of this activity is, providing a discussion environment about a case solution process to the people from different levels and make them aware of their mistaken points and complete them. Lack of information about the diseases or situations in these cases will be removed or completed by discussing in small groups. Solving many cases about same situation will provide experience for using the same knowledge in different conditions. It is continued by presenting the cases step by step and creating new ideas for each step. Instructor gives the correct information and decision in every step.

4.1.4. Article debate

It is a small group activity aims to understand the article's evidence level, to base an application on evidence and to reach new information about a topic. All parts of the article are read and followed by creating ideas about its methodological accuracy and clinical reflections and when it is necessary criticising it. Instructor gives the correct information in each step and declares the right decision. Specialist candidate is gained to analyse, to question and to discuss problems in a scientific way to be able to plan similar studies and turn them into a scientific publication.

4.1.5. File debate

It is an educational method aims to gain information about rarely seen cases or different presentations of commonly seen cases and to remember and use this information. Instructor ensures that learner gives a decision in each step by using writing, reports, images and other file's supplements and he/she gives feedback on these decisions. Feedbacks aim to make students correct answers constant, and improve the decisions that need to modify in a clear and understandable way.

4.1.6. Council

It is the process of assessing the case(s) with other disciplines. It provides student to perceive different points of view of different disciplines by case's complexity rather than its frequency.

4.1.7. Course

It is an educational activity performed in more than one session to reach a defined objective in a given subject. Aim is generally to gain one or several clinical or interventional competencies. During the course, presentations, small group workings, application trainings are performed in a harmony.

4.2. Applied Education Activities (AA)

4.2.1. Inpatient Care

4.2.1.1. Visit

It is an effective method of learning that creates different learning environments for different students. Students who are following and not following the patient profit by visit in different ways. The studnet who is following-up the patient learns by following-up patient and obtaining feedbacks, other students learns this experience by watching. Visit provides learning by discussing the cases after the patient's room and seeing case in a real environment.

4.2.1.2. Shift

It affects permanent and deep learning in the high responsibility environment. Assessing the case in a high responsibility situation provides students to use existing skills and knowledge and motivate him/her to learn missing. Shift increases self-confidence in the

ones who have required competence and it increases motivation to gain knowledge and skill in the ones who are not competent. That is why it is important that competencies which are used frequently in shifts are classified among first seniority competencies.

4.2.1.3. Intervention

All interventions intended to diagnosis and treatment are taught by applying step by step under a guidance after presenting by instructor. Feedbacks are given for each application step. Inciting to clear and constructive involvement, punctual and leading feedbacks must be provided to student to correct missing and underdeveloped aspects and to insist on the ones done correctly. For each intervention, numbers of repetitions are provided to reach the predefined competence level.

4.2.1.4. Operation

It is a process of interference holding many decision and intervention inside of it. All steps of the operation process are taught under high observation to reach the required competence level for each decision and intervention from the least risky/complicated to most risky/complicated. For each step, numbers of repetitions are provided to reach the predefined competence level.

4.2.2. Outpatient care

Student makes case assessment under observation and decides diagnosis and treatment choice. It is an effective method that student learns different treatment methods and various application ways of high/mid frequent urgent or non urgent cases. That is why it is important that competencies which are used frequently in outpatient care are classified among 1st seniority competencies.

4.3. Independent Learning Activities by Discovery (IA)

4.3.1. Inpatient follow-up

It is a process of realizing, determining and completing the learning need from any kind of educational resources for a student who could not reach required competence in an inpatient case during the studies, which is under observation, of a student

who has reached that competence. Instructor is responsible from the accuracy and reliability of these learning sources.

4.3.2. Outpatient/material follow-up

It is a process of realizing, determining and completing the learning need from any kind of educational resources for a student who could not reach required competence in an urgent or nonurgent outpatient case during the studies, which is under observation, of a student who has reached that competence. Instructor is responsible from the accuracy and reliability of these learning sources.

4.3.3. Peer Learning

It is a learning process that student learns by observing a peer or by discussing with a peer during a case solution.

4.3.4. Literature reading

It is a process of student reading literature in required subjects and link with clinical applications.

4.3.5. Research

It is a process that student alone or with a team design a research and determine education need during this and completing it from any educational source.

4.3.6. Teaching

It is a process that when student teaches an intervention or a clinical subject to someone else, student realizes different point of views, thinks about questions never thought before or distinguishes situations never realized before and determine education need during this and completing it from any educational source.

5. EDUCATION RESOURCES

5.1. Teacher Standards

It is necessary to have at least three orthopaedics and traumatology specialist including at least one associate professor. Instructors must be specialist for at least three years. Instructors must be worked in an education institution at least one year. Proportion of instructors to assistants must be at least ½ in the clinics with up to 35 beds. This proportion must be 1/3 in the clinics with more than 35 beds. Number of the performed A,B,C group operations must be at least 100 for each research assistant in the institutions.

5.2. Room Standards

Academic member rooms (Suggested: There must be one room per an academic member and there must be a stretcher to examine patients and there must be a sink to wash hand.)
Classroom (For Class for trainees, Seminar, Oral-written exams, Literature studies, Case presentations, Article assessment, activities. Preferably there must be a large screen LCD TV, projector, board, negatoscope in case, and other education materials.)
Meeting room (A room where academics can meet, gather councils, make decisions for clinics.)
Clinics (Patient rooms, plaster room, dressing and small interventions room, Nurse rooms, Assistant doctor room, night doctor room, Depot, Personnel room, as a suggestion ; physiotherapy room,)
Policlinic (Plaster room, dressing and small interventions room, examination rooms, Depot, Registry and information desk, resting room)
Intensive care unit for surgery.
Operating theatre.

5.3. Equipment Standards

Equipments in the operating theatre:
C handed scope
Traction table
Lead shirt, neck collar, gloves
Drill engine
Fundamental orthopaedic surgery hand devices and tools
Arthroscopy system
Cast engine
Equipments beside orthopaedics department:
Conventional Radiology

CT MRI Nuclear Medicine Biochemistry laboratories Microbiology laboratories Serology laboratories Physical treatment units

6. ASSESSMENT AND EVALUATION

Assessment methods approved by the teacher are applied.

7. REFERENCES

TUKMOS, SYSTEM OF SPECIALTY BOARD IN MEDICINE FOR SETTING THE SCHEDULE AND DEFINING THE STANDARDS, Guide for preparing core Schedule, v.1.1., 2013