

Basic Learning Objectives				
	Knowledge	Skill	Attitude	Keywords
S.1 Basic Science				
S.1.1 Anatomy				
Functional anatomy of the glenohumeral joint	Describes the detailed anatomy and functional anatomy of the glenohumeral joint. Describes the localization, function and structure of the cartilage, capsule, ligaments and labrum. Special Emphasis shall be laid on the neuro-vascular anatomy around the glenohumeral joint	Expects the surgeon to understand the functional anatomy of the glenohumeral joint to treat conditions accordingly.	Appreciates the high relevance of profound understanding and knowledge of glenohumeral anatomy for proper diagnostics and conservative as well as operative treatment of different pathologies.	Shoulder joint Glenohumeral joint Functional anatomy
Functional anatomy of the rotator cuff (RC) and long head of biceps (LHB)	Describes the detailed anatomy and functional anatomy of the RC muscles and tendons as well as the muscle and tendon of the LHB. Describes the localization, function and structure of the RC and LHB.	Expects the surgeon to understand the functional anatomy of the RC & LHB to treat conditions accordingly.	Appreciates the high relevance of profound understanding and knowledge of RC & LHB anatomy for proper diagnostics and conservative as well as operative treatment of different pathologies.	Rotator cuff Long head of biceps Functional anatomy
Functional anatomy of the subacromial space	Describes the detailed anatomy and functional anatomy of the subacromial space with its structures. Describes the localization, function and structure of the subacromial space.	Expects the surgeon to understand the functional anatomy of the subacromial space to treat conditions accordingly.	Appreciates the high relevance of profound understanding and knowledge of the subacromial space anatomy for proper diagnostics and conservative as well as operative treatment of different pathologies.	Subacromial space Bursa
Functional anatomy of the clavicle and acromioclavicular (AC) & sternoclavicular (SC) joint	Describes the detailed anatomy and functional anatomy of the clavicle with it's SC and AC joint. Describes the localization, function and structure of the clavicle, SC and AC joint.	Expects the surgeon to understand the functional anatomy of the clavicle, SC & AC joint to treat conditions accordingly.	Appreciates the high relevance of profound understanding and knowledge of the clavicle, SC and AC joint anatomy for proper diagnostics and conservative as well as operative treatment of different pathologies.	Subacromial Space Acromion Bursa Functional anatomy
Anatomy of the proximal humerus	Describes the detailed bony and functional anatomy of the proximal humerus. Describes the localization, function and structure of the proximal humerus.	Expects the surgeon to understand the functional anatomy of the proximal humerus to treat conditions accordingly.	Appreciates the high relevance of profound understanding and knowledge of anatomy of the proximal humerus for proper diagnostics and conservative as well as operative treatment of different pathologies.	Proximal humerus Humeral head Tuberosities Anatomy
Anatomy of the scapula	Describes the detailed bony and functional anatomy of the scapula. Describes the localization, function and structure of the scapula.	Expects the surgeon to understand the functional anatomy of the scapula to treat conditions accordingly.	Appreciates the high relevance of profound understanding and knowledge of anatomy of the scapula for proper diagnostics and conservative as well as operative treatment of different pathologies.	Scapula Glenoid Anatomy Structure
S.1.2 Biomechanics				
Basic biomechanics	Teaches basic biomechanics of the glenohumeral joint with all it's surrounding structures like illustrated in S.1.1.	Expects the surgeon to understand the basic biomechanics of the shoulder joint and it's structures like illustrated in S.1.1 and to transfer this knowledge into patient treatment.	Appreciates the high relevance of profound understanding and knowledge of shoulder biomechanics for proper diagnostics and treatment of shoulder pathologies.	Biomechanics shoulder Movement shoulder Testing shoulder
Shoulder kinematics	Teaches kinematics of the glenohumeral joint with all it's surrounding structures like illustrated in S.1.1.	Expects the surgeon to understand the kinematics of the shoulder joint and it's structures like illustrated in S.1.1 and to transfer this knowledge into patient treatment.	Appreciates the high relevance of profound understanding and knowledge of shoulder kinematics for proper diagnostics and treatment of shoulder pathologies.	Biomechanics shoulder Movement shoulder Testing shoulder
Glenohumeral stability	Teaches the biomechanical principles a of glenohumeral stability.	Expects the surgeon to understand the principles of shoulder joint stability and to transfer this knowledge into patient treatment.	Appreciates the high relevance of profound understanding and knowledge of glenohumeral stability for proper diagnostics and treatment of shoulder pathologies.	Shoulder stability Glenohumeral stability Joint congruence
S.1.3 Surgical approaches				

Arthroscopic portals and approaches	Has detailed knowledge of the arthroscopic portals and approaches to the shoulder joint, in a step by step sequence, with special respect for the position and course of the major neuro-vascular structures at the shoulder. Teaches the surgeon the possibilities and limitations of the approaches.	Expects the surgeon to be able to apply basic and profound knowledge of arthroscopic portals and approaches onto treatment of shoulder pathologies.	Appreciates the high relevance of profound understanding and knowledge of shoulder surgical approaches for proper surgical treatment of shoulder pathologies.	Arthroscopy shoulder Arthroscopic approach shoulder Portal arthroscopy shoulder
Deltopectoral approach	Has detailed knowledge of the deltopectoral approach to the shoulder joint, in a step by step sequence, with special respect for the position and course of the major neuro-vascular structures at the shoulder. Teaches the surgeon the possibilities and limitations of the approach.	Expects the surgeon to be able to apply basic and profound knowledge of deltopectoral approaches onto treatment of shoulder pathologies.	Appreciates the high relevance of profound understanding and knowledge of shoulder surgical approaches for proper surgical treatment of shoulder pathologies.	Deltopectoral approach Cephalic vein Deltoid muscle Pectoralis muscle
Supero-lateral approach	Has detailed knowledge of the supero-lateral approach to the shoulder joint, in a step by step sequence, with special respect for the position and course of the major neuro-vascular structures at the shoulder. Teaches the surgeon the possibilities and limitations of the approach.	Expects the surgeon to be able to apply basic and profound knowledge of supero-lateral approaches onto treatment of shoulder pathologies.	Appreciates the high relevance of profound understanding and knowledge of shoulder surgical approaches for proper surgical treatment of shoulder pathologies.	Open approach shoulder Transdeltoidal approach Superior-lateral approach shoulder
Posterior approaches	Has detailed knowledge of posterior approaches to the shoulder joint, in a step by step sequence, with special respect for the position and course of the major neuro-vascular structures at the shoulder. Teaches the surgeon the possibilities and limitations of the approaches.	Expects the surgeon to be able to apply basic and profound knowledge of posterior approaches onto treatment of shoulder pathologies.	Appreciates the high relevance of profound understanding and knowledge of shoulder surgical approaches for proper surgical treatment of shoulder pathologies.	Posterior approach shoulder Delta split Codman McWhorther
Combined approaches	Has detailed knowledge of combined approaches to the shoulder joint, in a step by step sequence, with special respect for the position and course of the major neuro-vascular structures at the shoulder. Teaches the surgeon the possibilities and limitations of the approach.	Expects the surgeon to be able to apply basic and profound knowledge of combined approaches onto treatment of shoulder pathologies.	Appreciates the high relevance of profound understanding and knowledge of shoulder surgical approaches for proper surgical treatment of shoulder pathologies.	Approaches shoulder Dissection shoulder Opening shoulder
S.1.4 Epidemiology				
Glenohumeral embryology	Teaches basic and detailed knowledge on glenohumeral embryology with respect to shoulder pathologies.	Expects the surgeon to understand the principles of shoulder embryology and to transfer this knowledge into patient treatment.	Appreciates the high relevance of profound understanding and knowledge of shoulder pathology epidemiologies.	Embryology shoulder joint Natural history shoulder Glenohumeral embryology
S.1.5 Genetics				
Clinical genetics	Teaches basic and detailed knowledge on clinical genetics of shoulder pathologies.	Expects the surgeon to understand the principles of clinical genetics of shoulder pathologies and to transfer this knowledge into patient treatment.	Appreciates the high relevance of profound understanding and knowledge of clinical genetics of shoulder pathologies.	Genetics shoulder pathologies Gene defect shoulder
S.2 Diagnostics				
	Knowledge	Skill	Attitude	Keywords
S.2.1 Imaging				
Sonography/ Ultrasound	Teaches basic and detailed knowledge of ultrasound and its application in the diagnostics and treatment of shoulder pathologies. Key structures: rotator cuff tendons and muscles, long head of biceps, subacromial space, glenohumeral joint, AC joint, SC joint	Expects the surgeon to be able to display the mentioned key structures via ultrasound and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of shoulder ultrasound investigations.	Ultrasound Anatomical landmarks Shoulder diagnostics

Nuclear medicine	Teaches basic and detailed knowledge basics of nuclear medicine and its application in the diagnostics and treatment of shoulder pathologies.	Expects the surgeon to be able to understand the mentioned key structures and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of nuclear medicine for diagnostics and treatment of shoulder pathologies.	Bone Scintigraphy Tumors Shoulder Arthroplasty Implant Loosening
MRI/ MR Arthrography	Teaches basic and detailed knowledge of MRI and MR Arthrography and its application in the diagnostics and treatment of shoulder pathologies.	Expects the surgeon to be able to understand the mentioned key structures in MRI and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of MRI and MR Arthrography for diagnostics and treatment of shoulder pathologies.	MRI MR Arthrography Inflammation Rotator cuff
CT/ CT Arthrography	Teaches basic and detailed knowledge on the theoretical basics of CT and CT Arthrography and its application in the diagnostics and treatment of shoulder pathologies.	Expects the surgeon to be able to understand the mentioned key structures in CT and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of CT and CT Arthrography for diagnostics and treatment of Shoulder pathologies.	CT CT Arthrography Bone Fracture
DEXA	Teaches basic and detailed knowledge on the theoretical basics of Bone Density Measurements and its application in the diagnostics and treatment of shoulder pathologies.	Expects the surgeon to be able to understand the mentioned bone structures by using DEXA and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of Bone Density Measurements for diagnostics and treatment of shoulder pathologies.	Bone mineral density children and adolescents dual-energy X-ray absorptiometry
Scintigraphy	Teaches basic and detailed knowledge basics of scintigraphy and its application in the diagnostics and treatment of shoulder pathologies.	Expects the surgeon to be able to understand the mentioned key structures and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of nuclear scintigraphy for diagnostics and treatment of shoulder pathologies.	Bone Scintigraphy Tumors Shoulder Arthroplasty Implant Loosening
S.2.2 Laboratory Medicine				
Blood parameters	Teaches basic and detailed knowledge on the theoretical basics of blood Parameters and its application in the diagnostics and treatment of shoulder pathologies. -CRP -WBC -PCT -IL-6 -rheumatoid factors -anti-CCP -ESR	Expects the surgeon to be able to understand the mentioned blood parameters and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of blood Parameters for diagnostics and treatment of elbow pathologies.	CRP Cytokine ESR Inflammatory marker Rheumatic disease WBC
Blood cultures	Lists the possibilities and value of blood cultures in the diagnosis of systemic infections accompanying shoulder pathologies.	Expects the surgeon to be able to understand the results of the mentioned blood cultures and to be able to differentiate physiologic and pathologic findings.	Appreciates the high relevance of profound understanding and knowledge of blood cultures for diagnostics and treatment of systemic infections accompanying shoulder pathologies.	Microbiology Resistance Organism Antibiotics Evasion
S.2.3 Puncture and biopsy				
Histology	Teaches the basic knowledge of histologic findings for the identification of shoulder pathologies in differentiating infectious and inflammatory diseases.	Expects the surgeon to be able to gather the relevant samples via open, mini-open and minimally-invasive techniques, while complying to necessary rules of hygiene and prevention of infection.	Appreciates the high relevance of profound understanding and knowledge of histology for diagnostics and treatment of systemic infections accompanying shoulder pathologies.	Histology Histopathology Synovium Sectioning
Synovia analysis	Teaches the basic knowledge of the use of synovia analysis for the identification of shoulder pathologies, in differentiating infectious and inflammatory diseases.	Expects the surgeon to be able to gather the relevant samples via open, mini-open and minimally-invasive techniques, while complying to necessary rules of hygiene and prevention of infection.	Appreciates the high relevance of synovia analysis for diagnostics and treatment of infectious and inflammatory shoulder pathologies.	Synovium Analysis Inflammation Rheumatic disease

Microbiology	Lists the possibilities and limitations of the essential diagnostic tools of microbiology in pathologies around the shoulder joint.	Expects the surgeon to be able to gather the relevant samples via open, mini-open and minimally-invasive techniques, while complying to necessary rules of hygiene and prevention of infection.	Appreciates the high relevance of microbiology for diagnosis of pathogens and antibiotic resistances in the treatment of infectious shoulder pathologies.	Microbiology Resistance Organism Antibiotics
S.2.4 Investigation Techniques				
Arthroscopy	Teaches the possibilities and limitations of arthroscopy as a minimal invasive diagnostic tool for shoulder pathologies. The surgeon is taught on how to respect the critical role of sterility and hygiene when applying arthroscopy to the shoulder joint.	Expects the surgeon to be able to perform diagnostic shoulder arthroscopy while respecting the complex anatomy of the shoulder joint and its surrounding neuro-vascular structures.	Appreciates the relevance of diagnostic arthroscopy and the according treatment for shoulder pathologies.	Shoulder Arthroscopy Diagnosis Visualization Hygiene
Nanoscope	Teaches the possibilities and limitations of the Nanoscope as a minimal invasive diagnostic tool for shoulder pathologies. The surgeon is taught on how to respect the critical role of sterility and hygiene when applying arthroscopy to the shoulder joint.	Expects the surgeon to be able to perform diagnostic shoulder exploration by using a Nanoscope while respecting the complex anatomy of the shoulder joint and its surrounding neuro-vascular structures.	Appreciates the diagnostic relevance of the Nanoscope for shoulder pathologies.	Shoulder Nanoscope Diagnosis Visualization Hygiene
Open surgical exploration	Teaches the possibilities and limitations of open surgical exploration as a diagnostic tool for shoulder pathologies. The surgeon is taught on how to respect the critical role of sterility and hygiene when applying arthroscopy to the shoulder joint.	Expects the surgeon to be able to perform open diagnostic shoulder exploration while respecting the complex anatomy of the shoulder joint and its surrounding neuro-vascular structures.	Appreciates the relevance of open diagnostic surgical exploration and the according treatment for shoulder pathologies.	Shoulder Open surgical exploration Diagnosis Visualization Hygiene
S.3 Shoulder Pathologies				
	Knowledge	Skill	Attitude	Keywords
S.3.1 Infections				
Primary/Secondary Empyema	Teaches the epidemiology, etiology and pathobiomechanics of the primary/secondary empyema. Lists the diagnostic algorithms of clinical and imaging investigations assessing infections (primary and secondary). Lists the exams and culture analysis needed for identification of shoulder infection. Knows the indications for conservative and operative treatment according to the available literature.	Expects the surgeon to be able to treat the empyema in the early phase and afterwards. Expects the trainee to perform arthroscopic and open surgical approaches and procedures like articular debridement, capsular release, Synovialectomy and other soft tissue procedure.	Appreciates the relevance of primary and secondary empyema, the necessity for proper diagnostics and therewith adequate indications for treatment.	Infection shoulder Glenohumeral infection Empyema shoulder Pus shoulder
Prosthetic Infection	Teaches the epidemiology, etiology and pathobiomechanics of infections around prosthesis. Lists the diagnostic algorithms of clinical, laboratory and imaging investigations assessing periprosthetic infections (acute and chronic). Lists the exams and culture analysis needed to identify the pathogen microorganism of the infection. Knows the indications and the time for operative treatment, the steps for the surgical procedure, the devices available (spacer, cement, implants) according to the available literature.	Expects the surgeon to be able to treat periprosthetic infections in the early phase and afterwards conservatively as well as operativey. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform surgical approaches and procedures like articular debridement, capsular release, Synovialectomy, implant removal, 1 or 2-stage revisions.	Appreciates the relevance of periprosthetic infection, the necessity for proper diagnostics and therewith adequate indications for treatment.	Periprosthetic infection shoulder PPI Revision shoulder arthroplasty Infected shoulder replacement

Infection of Osteosynthesis	Teaches the epidemiology, etiology and pathobiomechanics of the infection around osteosynthesis. Lists the diagnostic algorithms of clinical laboratory and imaging investigations assessing infections around osteosynthesis (acute and chronic). Lists the exams, culture analysis needed to identify the pathogen microorganism of the infection. Knows the indications and the time for operative treatment, the steps for the surgical procedure, the devices available, negative pressure wound therapy and implant change/ removal according to the available literature.	Expects the surgeon to be able to treat the infection around an osteosynthesis and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment in those cases where the indication exist. Expects the trainee to perform open surgical approaches and procedures of tissue debridement, Synoviolectomy, implant removal etc..	Appreciates the relevance of infections around the synthesis, the necessity for proper diagnostics and therewith adequate indications for treatment.	Infection osteosynthesis Infection plate shoulder Shoulder fracture infection Infected nail shoulder
Osteomyelitis	Teaches the epidemiology, etiology and pathobiomechanics of osteomyelitis. Lists the diagnostic algorithms of clinical laboratory and imaging investigations assessing infections (acute and chronic). Lists the exams, culture analysis needed to identify the pathogen microorganism of the osteomyelitis. Knows the indications and the time for operative treatment, the steps for the surgical procedure, the devices available, negative pressure wound therapy according to the available literature.	Expects the surgeon to be able to treat the infection in the bone and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment in those cases where the indication exist. Expects the trainee to perform open surgical approaches and procedures of tissue debridement, Synoviolectomy and other soft and bone tissues procedure.	Appreciates the relevance of infections in the bone osteomyelitis, the necessity for proper diagnostics and therewith adequate indications for treatment.	Osteomyelitis shoulder joint Osteomyelitis humerus Osteomyelitis scapula
S.3.2 Nerve Pathologies				
Parsonage Turner Syndrome	Explains the relevant background of Parsonage Turner syndrome, with looking into etiology and pathophysiology, including possible etiologic triggers (autoimmune, biomechanical, inflammatory) and risk factors (infections, immunizations, stress, drugs, iatrogenic). Familiar with the typical clinical course of this syndrome. Comfortable with the differential diagnosis (cervical spine, rotator cuff, nerve entrapment syndromes) and associated conditions. Knowledge of the various relevant complementary studies needed for diagnosis, including imaging studies and neurophysiologic exams.	Expects the surgeon to be comfortable with the physical exam of the patient with this pathology, including the neurologic exam of the affected extremity. Surgeon should be familiar with the treatment course, including pain management and physical therapy, and know when select patients without improvements that may benefit from surgical treatment, including neurolysis/neurorrhaphy/nerve graft or tendon/muscle transfers.	Recognizes the importance of this syndrome in the differential diagnosis of neurological deficits of the upper limb. Understands the importance of the conservative treatment.	Parsonage Turner Syndrome Nerve compression Idiopathic brachial plexus neuropathy
Cervical Spine Pathology	Trainee is able to distinguish between spine and shoulder pathology and to identify the pathologies included in the differential diagnosis of these two anatomical regions. Teaches its correct diagnosis, including physical examination, complementary exams and treatment possibilities.	Trainee to be comfortable with the physical exam of the patient with cervical spine pathology, including the neurologic exam, as well as cervical and shoulder objective evaluation. Surgeon should be able to identify and apply diagnosis and conservative treatment protocols for patients with cervical spine pathology.	Appreciates the importance of excluding cervical pathology in the patient with shoulder complains. Comfortable with protocols for correct diagnosis and orientation of these pathologies.	Compression Diagnosis Cervical Spine pathology Nerve pathology Nucleus pulposus prolapse Disc herniation
Plexus brachialis lesion	Lists the possible causes (obstetric, traumatic, inflammatory, idiopathic, transient) for brachial plexus injuries, and is able to identify the different involvement patterns. Teaches its correct diagnosis and treatment possibilities and how to differentiate it from other nerve syndromes.	Should be familiar with nerve recovering physiology and timing, and conservative treatment protocols.	Understands the relevance of brachial plexus injuries and of thorough diagnostic and therapeutic protocols for the correct approach of these lesions.	Decompression Pronator teres syndrome Nerve compression Nerve pathology Plexus lesion Erb palsy
Compression suprascapular nerve	Lists the multitude of causes for suprascapular nerve compression, and differentiates it according to the location of compression. Explains the important clinical findings in these syndromes, and knows the associated pathology. Comfortable with the diagnosis and treatment protocols.	Expects the surgeon to be able to perform decompression of the suprascapular nerve at the spinoglenoid or suprascapular notch. Able to treat concomitant shoulder pathology.	Recognizes these syndromes and respective causes, as well as their importance in patients with neurologic lesions around the shoulder girdle. Understand the importance of thorough diagnostic and therapeutic protocols for the correct diagnosis and treatment of suprascapular nerve compression.	Suprascapular nerve Spinoglenoid notch Suprascapular notch Nervus suprascapularis

Axillary Nerve Damage	Being able to clinically diagnosis an axillary nerve injury, and choose the appropriate complementary studies. Understand and differentiate the possible causes of axillary nerve damage, including idiopathic, inflammatory, traumatic, compressive and iatrogenic. Being able to determine the need for conservative vs surgical treatment, and being familiar with the therapeutic protocols for the correct diagnosis and treatment of these lesions.	Surgeon should be familiar with nerve recovering physiology and the conservative treatment when appropriate. Expects the surgeon to be able to perform release of the quadrangular space or neurolysis or neuroorrhaphy of the axillary nerve if needed.	Appreciates the relevance of axillary nerve lesions, and of thorough surgical techniques to avoid some of these injuries.	Quadrangular space syndrome Axillary nerve injury Brachial plexus Nerve injury
S.3.3 Tumors				
Osteoidosteoma	Teaches the etiology and epidemiology of this rare benign tumor. Lists the diagnostic modalities to differentiate it from other lesions and other causes of non-traumatic pain.	Expects the surgeon to be able to perform minimally-invasive and open approaches to get access to the sites of the lesions and how to remove it while preserving intact bone.	Appreciates the relevance of osteoidosteoma of the shoulder, the necessity for thorough diagnostics and careful surgical techniques for treatment.	Osteoidosteoma Shoulder Osteoblastic tumor Neoplasia
Primary malignant Tumors	Lists the rare primary malignant bone tumors of the shoulder, their diagnostic and treatment algorithms.	Expects the surgeon to be able to perform surgical approaches to get access to the sites of the lesions to either perform diagnostic biopsy or to remove the lesions while preserving intact bone and soft tissues.	Appreciates the relevance of primary malignant tumors of the shoulder, the necessity for thorough diagnostics and careful surgical techniques for treatment, while adhering to established treatment algorithms.	Malignant bone tumour shoulder Tumor shoulder
Metastatic cancer	Lists the possible primary malignancies that may cause metastatic disease to the shoulder area and teaches their diagnostic and treatment algorithms.	Expects the surgeon to be able to perform surgical approaches to get access to the sites of the lesions to either perform diagnostic biopsy or to remove the lesions while preserving intact bone and soft tissues.	Appreciates the relevance of metastatic cancer of the shoulder, the necessity for thorough diagnostics and careful surgical techniques for treatment, while adhering to established treatment algorithms.	Metastasis shoulder Carcinoma Malignant tumor Shoulder joint
Benign Soft Tissue Lesions	Lists the possible benign soft tissue lesions that may be encountered of the shoulder and teaches their diagnostic and treatment algorithms.	Expects the surgeon to be able to perform surgical approaches to - if indicated - get access to the sites of the lesions to either perform diagnostic biopsy or to remove the lesions while preserving intact bone and soft tissues.	Appreciates the relevance of benign soft tissue lesions of the shoulder, the necessity for thorough diagnostics and careful surgical techniques for treatment, while adhering to established treatment algorithms.	Benign lesion Shoulder tumor Soft tissue tumour
Enchondroma	Teaches the etiology and epidemiology of this benign shoulder tumor. Lists the diagnostic modalities to differentiate it from other lesions.	Expects the surgeon to be able to perform minimally-invasive and open approaches to get access to the sites of the lesions and how to remove it while preserving intact bone.	Appreciates the relevance of enchondroma of the shoulder, the necessity for thorough diagnostics and careful surgical techniques for treatment.	Enchondroma shoulder Multiple enchondromatosis Chondrosarcoma
Osteosarcoma	Teaches the etiology and epidemiology of this rare malignant shoulder tumor. Lists the diagnostic and treatment algorithms.	Expects the surgeon to be able to perform surgical approaches to get access to the sites of the lesion to either perform diagnostic biopsy or to remove the lesions while preserving intact bone and soft tissues.	Appreciates the relevance of osteosarcoma of the shoulder, the necessity for thorough diagnostics and careful surgical techniques for treatment, while adhering to established treatment algorithms.	Osteosarcoma shoulder Malignant bone tumour shoulder
NOF	Teaches the etiology and epidemiology of this benign shoulder tumor. Lists the diagnostic modalities to differentiate it from other lesions.	Expects the surgeon to be able to perform minimally-invasive and open approaches to get access to the sites of the lesions and how to remove it while preserving intact bone.	Appreciates the relevance of non-ossifying fibroma (NOF) of the shoulder, the necessity for thorough diagnostics and careful surgical techniques for treatment.	Benign shoulder tumor Non-ossifying fibroma (NOF) Neurofibromatosis
S.3.4 Sports Injuries				
Anterior Dislocation - First Episode	Teaches the epidemiology, etiology and pathobiomechanics of the first episode of anterior shoulder dislocation. Lists the diagnostic algorithms of clinical and imaging investigations assessing the first episode of dislocation both before and after reduction. Knows the indications for conservative and operative treatment after the first episode of dislocation according to the available literature.	Expects the surgeon to be able to reduce anterior shoulder dislocations in the acute setting. Expects the surgeon to be able to supervise conservative treatment following reduction of the first episode - if indicated. Expects the surgeon to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to address instability of the shoulder following the first episode of dislocation - if indicated.	Appreciates the relevance of shoulder instability after the first episode of anterior shoulder dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.	Shoulder dislocation Anterior dislocation Luxation shoulder joint Glenohumeral dislocation Shoulder instability

<p>Anterior Dislocation - Recurrent Episodes</p>	<p>Teaches the epidemiology, etiology and pathobiomechanics of recurrent episodes of anterior shoulder dislocation. Lists the diagnostic algorithms of clinical and imaging investigations assessing recurrent episodes of dislocation. Evaluates both glenoid and humeral soft tissue injuries, evaluates and quantifies glenoid and humeral bone loss, distinguishes between unipolar and bipolar injuries, distinguishes between on-track and off-track instability. Knows the indications for conservative and operative treatment after the recurrent episodes of dislocation, according to the available literature. Acknowledges the importance of humeral and glenoid injuries in the decision and risk of failure for each surgical procedure</p>	<p>Expects the surgeon to be able to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat recurrent anterior shoulder dislocation - these include soft tissue procedures to the glenoid, bony stabilization surgeries to the glenoid (Latarjet and free bone grafts transfers), humeral head reconstruction and remplissage procedures to the humerus. Expects the surgeon to be able to perform arthroscopic and open surgical approaches to revise previous surgeries performed to treat recurrent anterior shoulder dislocation that have failed.</p>	<p>Appreciates the relevance of shoulder instability after recurrent episodes of anterior shoulder dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.</p>	<p>Recurrent anterior shoulder dislocation Shoulder instability Multiple dislocations shoulder</p>
<p>Anterior Dislocation - Locked Dislocation</p>	<p>Teaches the epidemiology, etiology and pathobiomechanics of locked anterior shoulder dislocation. Lists the diagnostic algorithms of clinical and imaging investigations assessing locked anterior dislocation. Knows the indications for conservative and operative treatment after diagnosis of a locked dislocation, according to the available literature. Acknowledges the importance of humeral and glenoid injuries in the decision and risk of failure for each surgical procedure</p>	<p>Expects the surgeon to be able to perform surgical approaches and procedures to the shoulder joint to treat locked anterior shoulder dislocation - these include soft tissue procedures to the glenoid or humerus, bony stabilization surgeries to the glenoid, humeral head reconstruction and shoulder arthroplasty.</p>	<p>Appreciates the relevance of locked anterior shoulder dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.</p>	<p>Locked anterior shoulder dislocation Locked shoulder Dislocation shoulder Missed dislocation shoulder</p>
<p>Posterior Dislocation - First Episode</p>	<p>Teaches the epidemiology, etiology and pathobiomechanics of the first episode of posterior shoulder dislocation. Lists the diagnostic algorithms of clinical and imaging investigations assessing the first episode of dislocation both before and after reduction. Knows the indications for conservative and operative treatment after the first episode of dislocation according to the available literature.</p>	<p>Expects the surgeon to be able to reduce posterior shoulder dislocations in the acute setting. Expects the surgeon to be able to supervise conservative treatment following reduction of the first episode - if indicated. Expects the surgeon to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to address instability of the shoulder following the first episode of dislocation - if indicated.</p>	<p>Appreciates the relevance of shoulder instability after the first episode of anterior shoulder dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.</p>	<p>Shoulder dislocation Posterior dislocation Luxation shoulder joint Glenohumeral dislocation Shoulder instability</p>
<p>Posterior Dislocation - Recurrent Episodes</p>	<p>Teaches the epidemiology, etiology and pathobiomechanics of recurrent episodes of anterior shoulder dislocation. Lists the diagnostic algorithms of clinical and imaging investigations assessing recurrent episodes of dislocation. Evaluates both glenoid and humeral soft tissue injuries, evaluates and quantifies glenoid and humeral bone loss, distinguishes between unipolar and bipolar injuries, distinguishes between on-track and off-track instability. Knows the indications for conservative and operative treatment after the recurrent episodes of dislocation, according to the available literature. Acknowledges the importance of humeral and glenoid injuries in the decision and risk of failure for each surgical procedure</p>	<p>Expects the surgeon to be able to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat recurrent anterior shoulder dislocation - these include soft tissue procedures to the glenoid, bony stabilization surgeries to the glenoid (Latarjet and free bone grafts transfers), humeral head reconstruction and remplissage procedures to the humerus. Expects the surgeon to be able to perform arthroscopic and open surgical approaches to revise previous surgeries performed to treat recurrent anterior shoulder dislocation that have failed.</p>	<p>Appreciates the relevance of shoulder instability after recurrent episodes of anterior shoulder dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.</p>	<p>Recurrent posterior shoulder dislocation Shoulder instability Multiple dislocations shoulder</p>
<p>Posterior Dislocation - Locked Dislocation</p>	<p>Teaches the epidemiology, etiology and pathobiomechanics of locked anterior shoulder dislocation. Lists the diagnostic algorithms of clinical and imaging investigations assessing locked anterior dislocation. Knows the indications for conservative and operative treatment after diagnosis of a locked dislocation, according to the available literature. Acknowledges the importance of humeral and glenoid injuries in the decision and risk of failure for each surgical procedure</p>	<p>Expects the surgeon to be able to perform surgical approaches and procedures to the shoulder joint to treat locked anterior shoulder dislocation - these include soft tissue procedures to the glenoid or humerus, bony stabilization surgeries to the glenoid, humeral head reconstruction and shoulder arthroplasty.</p>	<p>Appreciates the relevance of locked anterior shoulder dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.</p>	<p>Locked posterior shoulder dislocation Locked shoulder Dislocation shoulder Missed dislocation shoulder</p>

SLAP lesion	Teaches the epidemiology of superior labrum anterior to posterior lesions and explains the pathobiomechanics. Teaches classifications such as the one by Snyder et al. (Type I - IV). Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to perform arthroscopy to the shoulder joint, to treat the pathology of the labrum in particular of the superior portion that is part of the bicipital anchor perform refixation of these structures in the acute setting in young patients as well as tenotomy or tenodesis of the long head of biceps in the chronic setting and depending on the age and activity of the patient.	Appreciates the relevance of shoulder dysfunction affected by the SLAP lesion, the necessity for proper diagnostics and therewith adequate indications for treatment.	SLAP lesion Labrum lesion SLAP tear Overhead Snyder classification
Antero - and antero-inferior labrum lesion	Teaches the epidemiology of anterior- and anteroinferior labrum lesions and explains the pathobiomechanics. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat recurrent anterior shoulder dislocation - these include soft tissue procedures to the glenoid, bony stabilization surgeries to the glenoid (Latarjet and free bone grafts transfers), humeral head reconstruction and remplissage procedures to the humerus. Expects the surgeon to be able to perform arthroscopic and open surgical approaches to revise previous surgeries performed to treat recurrent anterior shoulder dislocation that have failed.	Appreciates the relevance of anterior and antero-inferior labrum lesions and the necessity for proper diagnostics and there with adequate indications for treatment.	Labrum lesion Labral tear Shoulder instability Shoulder dislocation
Postero- and posteroinferior labrum lesion	Teaches the epidemiology of anterior- and anteroinferior labrum lesions and explains the pathobiomechanics. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat recurrent posterior shoulder dislocation - these include soft tissue procedures to the glenoid, bony stabilization surgeries to the glenoid (free bone grafts transfers), humeral head reconstruction and reverse-remplissage procedures to the humerus. Expects the surgeon to be able to perform arthroscopic and open surgical approaches to revise previous surgeries performed to treat recurrent posterior shoulder dislocation that have failed.	Appreciates the relevance of posterior and postero-inferior labrum lesions and the necessity for proper diagnostics and there with adequate indications for treatment.	Labrum lesion Labral tear Shoulder instability Shoulder dislocation
Chondromalacia humeral head	Defines the pathology with its multiple pathogenesis and epidemiologies. Lists the currently available classification systems such as the classifications according to: 1. Kellgren and Lawrence; 2. Samilson and Pietro; 3. Gerber; 4. Guyet and Allain. Teaches the treatment algorithms for osteochondral lesions and cartilage wear on the humeral head. Presents the common indications, based on the present literature.	Expects the surgeon to be able to treat chondral lesions conservatively with physiotherapy and injections. Expects the surgeon to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat chondral lesions - these include debridement, microfracturing, chondrocyte transplantation and other procedures.	Appreciates the relevance of osteochondral lesions of the humeral head and the necessity for proper diagnostics and there with adequate indications for treatment.	Chondromalacia shoulder CAM procedure Osteoarthritis shoulder Cartilage damage
Chondromalacia glenoid	Defines the pathology with its multiple pathogenesis and epidemiologies. Lists the currently available classification systems such as the classifications according to: 1. Kellgren and Lawrence; 2. Samilson and Pietro; 3. Gerber; 4. Guyet and Allain. Teaches the treatment algorithms for osteochondral lesions and cartilage wear on the glenoid. Presents the common indications, based on the present literature.	Expects the surgeon to be able to treat chondral lesions conservatively with physiotherapy and injections. Expects the surgeon to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat chondral lesions - these include debridement, microfracturing, chondrocyte transplantation and other procedures.	Appreciates the relevance of osteochondral lesions of the glenoid and the necessity for proper diagnostics and there with adequate indications for treatment.	Chondromalacia shoulder CAM procedure Osteoarthritis shoulder Cartilage damage
Posterosuperior Glenoid Impingement (PSGI)	Describes the natural course. Defines the etiology (traumatic- atraumatic) Defines the symptomatology and significance. Defines the typical radiologic findings Lists conservative treatment indications. Lists surgical treatment indications. Lists possible complications and results of treatment.	Expects the surgeon to be competent in examination under anaesthesia and diagnostic arthroscopy. Recognise anatomical variations. Expects the surgeon to perform posterior labral repair and other techniques like glenoplasty or rotator cuff repair - if indicated.	Appreciates the importance and challenges of diagnosis of PSGI condition. Appreciate anatomical variations in radiological imaging and at arthroscopy. Appreciate surgical anatomy relevant to open techniques.	Inlet Impingement Internal Impingement Labrum lesion Impingement

Rupture of the long head of biceps (LHB)	Teaches the epidemiology of LHB ruptures and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat ruptures of the LHB in the acute phase and afterwards. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to the joint to address the pathology (tenodesis, removal of intraarticular LHB stump).	Appreciates the relevance of LHB ruptures, the necessity for proper diagnostics and therewith adequate indications for treatment.	Biceps rupture Poppey sign LHB rupture Rupture long head biceps
Pulley lesions	Teaches the epidemiology of Pulley lesions and explains the pathobiomechanics of it. Teaches classifications such as the one by Habermeyer et al. (type I - IV). Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat Pulley lesions in the acute phase and afterwards. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to the joint to address the pathology (tenotomy vs. tenodesis).	Appreciates the relevance of Pulley-lesions, the necessity for proper diagnostics and therewith adequate indications for treatment.	Pulley lesion CH ligament Hidden lesion Long head biceps
Tendinitis of the long head of biceps (LHB)	Teaches the epidemiology of LHB tendinitis and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat LHB tendinitis in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to the AC-joint to address the pathology (tenotomy vs. tenodesis).	Appreciates the relevance of LHB tendinitis, the necessity for proper diagnostics and therewith adequate indications for treatment.	Sentinel sign Long head of biceps Biceps pathology Tendinitis
AC-Joint dislocation	Teaches the epidemiology of AC-joint dislocations and explains the pathobiomechanics of it. Teaches the classification according to Rockwood grade I - VI. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat AC joint dislocations in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to the AC-joint to address the pathology.	Appreciates the relevance of AC-joint dislocations, the necessity for proper diagnostics and therewith adequate indications for treatment.	AC dislocation Rockwood classification AC joint separation
AC-Joint arthritis	Teaches the epidemiology of AC-joint arthritis and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat AC joint arthritis in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated (e.g. injections, physiotherapy). Expects the trainee to perform arthroscopic and open surgical approaches and procedures like AC-joint resection according to Mumford or a co-plaining to address the pathology.	Appreciates the relevance of AC-joint arthritis, the necessity for proper diagnostics and therewith adequate indications for treatment.	AC joint arthritis AC pain Osteophytes Mumford
Morbus Friedrich	Teaches the epidemiology of the aseptic osteonecrosis of the lateral clavicle and explains the pathomechanism of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat the osteonecrosis of the lateral clavicle in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to address the pathology.	Appreciates the relevance of the aseptic osteonecrosis of the lateral clavicle, the necessity for proper diagnostics and therewith adequate indications for treatment.	Necrosis AC joint AC joint Aseptic osteonecrosis
Weightlifters shoulder	Teaches the epidemiology of AC-joint lesions and explains the pathobiomechanics of a weightlifters shoulder. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat a weightlifters shoulder in the acute phase and afterwards. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to the AC-joint to address the pathology.	Appreciates the relevance of weightlifters shoulder, the necessity for proper diagnostics and therewith adequate indications for treatment.	AC joint pain Painful shoulder Weightlifting shoulder

Muscle/ Tendon injuries	Teaches the epidemiology, etiology and pathobiomechanics of different kinds of muscle- and tendon injuries like rotator cuff tears, ruptures at the myotendinous junction, muscle fibre injuries etc.. Lists the diagnostic algorithms of clinical and imaging investigations that are necessary for the treatment algorithm. Teaches the indications for conservative and operative treatment according to the condition, recent scientific knowledge and to the available literature.	Expects the surgeon to be able to treat acute muscle-tendon injuries in the acute phase and afterwards. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to address the muscle-/ tendon injury - if indicated.	Appreciates the relevance of muscle-/ and tendon injuries of the shoulder, the necessity for proper diagnostics and therewith adequate indications for treatment.	Muscle injury Tendon injury Rotator cuff tear Muscle edema Tendon trauma Muscle trauma
Sternoclavicular joint Dislocation	Teaches the epidemiology of ligamentous sternoclavicular joint dislocation and explains the pathobiomechanics. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to perform surgical approaches to the sternoclavicular joint, its ligamentous stabilizers to - if indicated - perform refixation of these structures in the acute setting, or perform augmentation and repair in the chronic setting.	Appreciates the relevance of sternoclavicular joint instability after sternoclavicular joint dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.	Dislocation Sternoclavicular joint Refixation Physiotherapy Overhead
Osteochondral Lesion SC-joint	Defines the pathology with its pathogenesis and epidemiology. Lists the currently available classification systems and treatment algorithms for osteochondral lesions. Presents the common indications, based on the present literature.	Expects the surgeon to be able to perform surgical approaches to the sternoclavicular joint to - if indicated - perform osteochondral debridement or cartilage repair strategies.	Appreciates the relevance of osteochondral lesions of the sternoclavicular joint the necessity for proper diagnostics and therewith adequate indications for treatment.	Osteochondral lesions Osteochondritis dissecans Sternoclavicular joint Arthritis
Intraarticular Disc lesion	Defines the pathology with its pathogenesis and epidemiology. Lists the currently available classification systems and shows their limitations. Offers recommendations for treatment algorithms. Presents the common indications for conservative/operative treatment, based on the present literature.	Expects the surgeon to be able to perform minimally-invasive, arthroscopic and open surgical approaches to the sternoclavicular joint to - if indicated - perform repositioning, fixation and replacement	Appreciates the relevance of intraarticular disc lesion and its implications on sternoclavicular joint biomechanics, the necessity for proper diagnostics and therewith adequate indications for treatment. Is aware of the special challenges in correctly choosing the method of fixation or replacement.	Fracture fixation Open reduction internal fixation Intraarticular disc Lesion Anatomy
S.3.5 Trauma				
Proximal Humerus Fractures	Teaches the epidemiology of proximal humerus fractures and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment including osteosynthesis (arthroscopic fixation, K-wires, nailing, plating) and arthroplasty (hemi and reverse shoulder arthroplasty) according to the available literature. Teaches the different classifications of proximal humerus fractures with the according treatment algorithm (classification of Neer, AO, Hertel and others).	Expects the surgeon to be able to treat proximal humerus fractures in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to address the pathology.	Appreciates the relevance of proximal humerus fractures, the necessity for proper diagnostics and therewith adequate indications for treatment.	Proximal humerus fracture ORIF Surgery fracture Conservative treatment humerus PHF

Dislocation Fractures of the Proximal Humerus	Teaches the epidemiology of dislocation fractures of the proximal humerus and/ or glenoid and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment including osteosynthesis (arthroscopic fixation, fixation with screws, nailing, plating) and arthroplasty (hemiarthroplasty and reverse shoulder arthroplasty) according to the available literature. Teaches the different classifications of proximal humerus fractures with the according treatment algorithm (classification of Neer, AO, Hertel and others).	Expects the surgeon to be able to treat dislocation fractures of the proximal humerus in the acute phase and afterwards operatively. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to address the pathology.	Appreciates the relevance of dislocation fractures of the proximal humerus, the necessity for proper diagnostics and there with adequate indications for treatment.	ORIF Reverse arthroplasty Plate proximal humerus Nail proximal humerus
Glenoid Fractures	Teaches the epidemiology of glenoid fractures and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment including osteosynthesis (arthroscopic fixation, fixation with screws, plating) and arthroplasty (reverse shoulder arthroplasty with bone grafting of the glenoid - if indicated) according to the available literature. Teaches the Ideberg classification with the according treatment algorithm.	Expects the surgeon to be able to treat glenoid fractures in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to address the pathology.	Appreciates the relevance of glenoid fractures, the necessity for proper diagnostics and there with adequate indications for treatment.	Glenoid fractures Conservative treatment Arthroscopy Fixation glenoid Open surgery
Scapula Fractures	Teaches the epidemiology of scapula fractures and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment including osteosynthesis (arthroscopic fixation, fixation with screws, plating) according to the available literature. Teaches the Ideberg classification with the according treatment algorithm.	Expects the surgeon to be able to treat scapula fractures in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to address the pathology.	Appreciates the relevance of scapula fractures, the necessity for proper diagnostics and there with adequate indications for treatment.	Scapula fractures Conservative treatment Arthroscopy Fixation glenoid Open surgery
Clavicle Fractures	Teaches the epidemiology of clavicle fractures and explains the pathobiomechanics of it. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment including osteosynthesis (arthroscopic fixation, fixation with tight-rope, fixation with screws/ nails, plating) according to the available literature. Teaches the different classifications (Robinson, Allman, AO, Neer & Rockwood, Jaeger and others) with the according treatment algorithm.	Expects the surgeon to be able to treat clavicle fractures in the acute phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment following the acute treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures to address the pathology.	Appreciates the relevance of clavicle fractures, the necessity for proper diagnostics and there with adequate indications for treatment.	Clavicle fractures Conservative treatment Plating Intramedullary pin Fixation clavicle Open surgery
S.3.6 Developmental Disorders				
Multidirectional Instability	Teaches the aetiology of multidirectional instability including issues of collagen disorder , repetitive microtrauma and muscle patterning including Stanmore triangle. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to perform conservative treatment as well as minimally-invasive, arthroscopic and open surgical approaches to the unstable glenohumeral joint with reference to labral repair, capsular repair & capsular repair. Awareness of revision and salvage procedures.	Appreciates the relevance of multidirectional instability, the necessity for proper diagnostics and there with adequate indications for treatment.	Shoulder instability Hyperlax shoulder Unstable shoulder

Erb Palsy	Teaches the epidemiology of Erb's palsy and risk factors e.g. obstetrical shoulder dystocia, avoidance, early identification and treatment . Understand anatomy of brachial plexus and relevant lesion of C5/6 and resultant deficit . Understand relevant imaging . Understand indications for interventions including nerve transfer, subscapularis lengthening and latissimus transfer. Understand long term sequelae and treatment of secondary degenerative conditions.	Expects the surgeon to appreciate importance of qualified prolonged physiotherapy. Ability to perform informative examination under anaesthesia & diagnostic arthroscopy . Ability to perform appropriate labral repair, capsular repair/plication. Appreciates revision procedures / salvage procedures.	Appreciates the relevance of Erb palsy, the necessity for proper diagnostics and there with adequate indications for treatment.	Plexus injury Upper limb injury Nerve damage
Scapula alata	Understands common forms of scapular winging and causes. Understands common causes of medial winging (serratus weakness due to long thoracic nerve palsy) and lateral winging (due to spinal accessory nerve palsy) and other causes of more global peri - scapular weakness due to more generalised muscular dystrophy such as fascioscapulothoracic dystrophy (FSHD). Understands relevant investigations including electrophysiological testing, genetic testing and specialised neurological testing. Understands non-operative and operative intervention including neurolysis, tendon transfer and scapulothoracic arthrodesis.	Expects the surgeon to be able to supervise prolonged physiotherapy. Ability to refer the patient appropriately for neurolysis if indicated. Knowledge of tendon transfer options and scapulothoracic arthrodesis.	Appreciates the relevance of Scapula alata, the necessity for proper diagnostics and there with adequate indications for treatment.	Winging scapula Serratus anterior palsy Shoulder blade
Scapula dyskinesia	Teaches the epidemiology of scapular dyskinesia and explains the pathomechanics. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature. Understands differences between primary and secondary scapular dyskinesia.	Expects the surgeon to be able to perform minimally-invasive, arthroscopic and open surgical approaches to resolve issues causing scapular dyskinesia such as rotator cuff lesions or stiffness. In rare cases have awareness of solutions to primary scapular dyskinesia refractory to non-operative treatment such as scapulothoracic arthroscopy	Appreciates the relevance of scapula dyskinesia, the necessity for proper diagnostics and there with adequate indications for treatment.	Kibler classification Dyskinesia shoulder Dysbalance shoulder
S.3.7 Inherent/ Growth associated				
Dysplasia of the glenoid	Teaches the epidemiology of glenoid dysplasia and explains the pathomechanics and Classification as the one by Walch et al.. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat the dysplastic glenoid in the early phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures like corrective osteotomies, capsular shifts and other soft tissue procedure as well as shoulder replacement surgery to address the pathology.	Appreciates the relevance of glenoid dysplasia, the necessity for proper diagnostics and therewith adequate indications for treatment.	Dysplastic glenoid Type C glenoid Bone loss glenoid
Dysplasia of the proximal humerus	Teaches the epidemiology of humeral dysplasia and explains the pathomechanics. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat the dysplastic proximal humerus in the early phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures like corrective osteotomies, capsular shifts and other soft tissue procedure as well as shoulder replacement surgery to address the pathology.	Appreciates the relevance of humeral dysplasia, the necessity for proper diagnostics and therewith adequate indications for treatment.	Dysplastic humeral head Bone loss proximal humerus Deformity proximal humerus
Adhesive capsulitis/ Frozen shoulder	Teaches the epidemiology of adhesive capsulitis and explains the pathomechanics as well as possible risk factors. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat adhesive capsulitis in the early phase and afterwards conservatively. Expects the trainee to be able to supervise conservative treatment like intraarticular or oral cortisone medication - if indicated. Expects the trainee to perform arthroscopic procedures like arthrolysis to address the pathology.	Appreciates the relevance of adhesive capsulitis, the necessity for proper diagnostics and therewith adequate indications for treatment.	Capsulitis Stiffness shoulder Frozen shoulder Conservative Cortisone

Osteochondrosis dissecans glenoid (OD)	Teaches the epidemiology of and explains the pathomechanics of OD and possible risk factors. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat OD in the early phase and afterwards conservatively. Expects the trainee to be able to supervise conservative treatment like intraarticular or oral cortisone medication - if indicated. Expects the trainee to perform arthroscopic procedures like arthrolysis to address the pathology.	Appreciates the relevance of OD, the necessity for proper diagnostics and therewith adequate indications for treatment.	Joint mouse Cartilage damage Arthroscopy Loose body
Osteochondrosis dissecans proximal humerus (OD)	Teaches the epidemiology of and explains the pathomechanics of OD and possible risk factors. Lists the diagnostic algorithms of clinical and imaging investigations, as well as the indications for conservative and operative treatment, according to the available literature.	Expects the surgeon to be able to treat OD in the early phase and afterwards conservatively. Expects the trainee to be able to supervise conservative treatment like intraarticular or oral cortisone medication - if indicated. Expects the trainee to perform arthroscopic procedures like arthrolysis to address the pathology.	Appreciates the relevance of OD, the necessity for proper diagnostics and therewith adequate indications for treatment.	Joint mouse Cartilage damage Arthroscopy Loose body
S.3.8 Caused by medical interventions				
Cartilage damage	Lists medical intervention that may damage the cartilage and may cause chondrolysis, diagnostic work-up to exclude other pathologies, precautions, treatment options.	Expects the surgeon to be able to recognize possible causes of cartilage damage due to medical intervention, avoid them, treat cartilage damage with joint preservation and cartilage restoration procedures or open surgical approaches.	Appreciates the relevance of cartilage damage and the necessity for proper intraoperative manipulation and skills to avoid them, diagnostics and therewith indications for treatment.	Osteoarthritis shoulder Loose bodies Osteophytes Surgery
Infection	Teaches the epidemiology, etiology of postoperative infections and possible causes. Lists the diagnostic algorithms of clinical, laboratory and imaging investigations assessing postoperative infections (acute and chronic). Lists the exams, culture analysis needed to identify the pathogen microorganism of the infection. Knows the indications and the time for operative treatment, the steps for the surgical procedure and the devices available (spacer, cement, prosthesis) according to the available literature.	Expects the surgeon to be able to treat the postoperative infection in the early phase and afterwards conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open surgical approaches and procedures articular debridement, capsular release, synovectomy and other soft tissue procedure.	Appreciates the relevance of post-op infection, the necessity for proper diagnostics and therewith adequate indications for treatment.	CRP Surgery Antibiotics Bacteria
Osteonecrosis	Lists medical intervention that may cause osteonecrosis, clinical evaluation and diagnosis, classifications and treatment options.	Expects the surgeon to be able to avoid medical interventions that may cause osteonecrosis, perform surgical approaches for the treatment of osteonecrosis.	Appreciates the relevance of osteonecrosis, the necessity for proper diagnostics and therewith adequate indications for treatment.	Avascular necrosis Cruess classification Collapse humeral head Arthroplasty shoulder
Non-Unions	Lists possible causes of fracture-non-union after conservative or operative treatment. Lists possible risk factors. Lists the diagnostic algorithms of clinical and imaging investigations. Recognizes septic non-union, precautions, treatment options.	Expects the surgeon to be able to predict factors that may lead to non-union or septic non-union, and to be able to treat non-union.	Appreciates the relevance of non-union, the necessity for proper diagnostics and therewith adequate indications for treatment.	Pseudarthrosis Non-healing Revision surgery Infection
S.3.9 Inflammatory/ Systemic diseases/ bone metabolism				
Rheumatoid diseases (RA)	Teaches the diagnostic criteria for RA as well as the pathomechanism of the disease. Explains the pharmacologic treatment of RA. Explains how the shoulder joint may be involved in this condition with its characteristics and the prognosis. Lists the indications of surgical and nonsurgical treatment.	Expects the trainee to be able to treat rheumatoid arthritic conditions of the shoulder and surrounding structures conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open procedures to address the pathology.	Appreciates the relevance of RA, the necessity for proper diagnostics and therewith adequate indications for treatment.	Rheumatoid arthritis Rheumatoid shoulder Shoulder arthroplasty Synovialitis Joint destruction
Pigmented villo-nodular synovitis (PVNS)	Teaches the diagnostic criteria for PVNS as well as the pathomechanism of the disease. Explains how the shoulder joint may be involved in this condition with its characteristics and the prognosis. Lists the indications of surgical and nonsurgical treatment.	Expects the trainee to be able to treat PVNS of the shoulder conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open procedures to address the pathology.	Appreciates the relevance of PVNS, the necessity for proper diagnostics and therewith adequate indications for treatment.	Shoulder tumor PVNS Synovialitis Joint destruction

Synovialitis	Teaches the diagnostic criteria for synovialitis as well as the pathomechanism of the disease. Explains how the shoulder joint may be involved in this condition with its characteristics and the prognosis. Lists the indications of surgical and nonsurgical treatment.	Expects the trainee to be able to treat synovialitis of the shoulder conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open procedures to address the pathology.	Appreciates the relevance of synovialitis, the necessity for proper diagnostics and therewith adequate indications for treatment.	Synovialitis Joint inflammation Joint destruction
Bursitis	Teaches the diagnostic criteria for bursitis as well as the pathomechanism of the disease. Explains how the shoulder joint may be involved in this condition with its characteristics and the prognosis. Lists the indications of surgical and nonsurgical treatment.	Expects the trainee to be able to treat bursitis of the shoulder conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open procedures to address the pathology.	Appreciates the relevance of bursitis, the necessity for proper diagnostics and therewith adequate indications for treatment.	Subacromial space Pain shoulder Subacromial injection
S.3.10 Degenerative				
Osteoarthritis	Defines the pathology with its multiple pathogenesis and epidemiologies. Lists the currently available classification systems such as the classifications according to: 1. Kellgren and Lawrence; 2. Samilson and Pietro; 3. Gerber; 4. Guyet and Allain. Teaches the treatment algorithms for osteoarthritis of the shoulder joint. Presents the common indications, based on the present literature.	Expects the surgeon to be able to treat osteoarthritis of the shoulder joint conservatively with physiotherapy, injections and others. Expects the surgeon to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat the condition - these include arthroscopic CAM procedures up to shoulder replacement surgery.	Appreciates the relevance of osteoarthritis of the shoulder joint and the necessity for proper diagnostics and there with adequate indications for treatment.	OA shoulder Arthroplasty shoulder joint Kellgren and Lawrence Painful shoulder Limited ROM
Loose bodies	Teaches the diagnostic criteria for loose bodies as well as the pathomechanism of the disease. Explains how the shoulder joint may be involved in this condition with its characteristics and the prognosis. Lists the indications of surgical and nonsurgical treatment.	Expects the trainee to be able to treat loose bodies of the shoulder conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open procedures to address the pathology.	Appreciates the relevance of loose bodies, the necessity for proper diagnostics and therewith adequate indications for treatment.	Osteoarthritis shoulder Arthroscopy Cartilage wear
Stiffness	Teaches the diagnostic criteria for shoulder stiffness based on degenerative conditions as well as the pathomechanism of the disease. Explains how the shoulder joint may be involved in this condition with its characteristics and the prognosis. Lists the indications of surgical and nonsurgical treatment.	Expects the trainee to be able to treat degenerative stiffness of the shoulder conservatively as well as operatively. Expects the trainee to be able to supervise conservative treatment - if indicated. Expects the trainee to perform arthroscopic and open procedures to address the pathology.	Appreciates the relevance of degenerative stiffness, the necessity for proper diagnostics and therewith adequate indications for treatment.	Painful shoulder Frozen shoulder Adhesive capsulitis
Chondromalacia humeral head	Defines the pathology with its multiple pathogenesis and epidemiologies. Lists the currently available classification systems such as the classifications according to: 1. Kellgren and Lawrence; 2. Samilson and Pietro; 3. Gerber; 4. Guyet and Allain. Teaches the treatment algorithms for chondromalacia of the humeral head. Presents the common indications, based on the present literature.	Expects the surgeon to be able to treat chondral lesions conservatively with Physiotherapy and Injections. Expects the surgeon to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat chondral lesions - these include debridement, microfracturing, chondrocyte transplantation and other procedures like AMIC.	Appreciates the relevance of osteochondral lesions of the humeral head and the necessity for proper diagnostics and there with adequate indications for treatment.	Loose bodies Osteoarthritis CAM Procedure Shoulder arthroscopy Shoulder arthroplasty
Chondromalacia glenoid	Defines the pathology with its multiple pathogenesis and epidemiologies. Lists the currently available classification systems such as the classifications according to: 1. Kellgren and Lawrence; 2. Samilson and Pietro; 3. Gerber; 4. Guyet and Allain. Teaches the treatment algorithms for chondromalacia of the glenoid. Presents the common indications, based on the present literature.	Expects the surgeon to be able to treat chondral lesions conservatively with Physiotherapy and Injections. Expects the surgeon to perform arthroscopic and open surgical approaches and procedures to the shoulder joint to treat chondral lesions - these include debridements, microfracturing, chondrocyte transplantation and other procedures like AMIC.	Appreciates the relevance of osteochondral lesions of the humeral head and the necessity for proper diagnostics and there with adequate indications for treatment.	Loose bodies Osteoarthritis CAM Procedure Shoulder arthroscopy Shoulder arthroplasty
S.4 Shoulder Conservative				
	Knowledge	Skill	Attitude	Keywords
S.4.1 Physical Therapy				

Physiotherapy	Teaches the trainee the principles of physiotherapy for the different shoulder conditions including the effect on the different soft-tissues (tendons and ligaments, muscles), bones and neuro-vascular structures. The trainee should be aware on the different indications and techniques of physiotherapy.	Expects the trainee to be able to refer patients to physiotherapy - if indicated.	Appreciates the relevance of the potential positive impact of physiotherapy on different shoulder pathologies.	Physiotherapy shoulder joint Mobilisation shoulder Stretching shoulder
Ergo therapy	Teaches the trainee the principles of ergotherapy for the different shoulder conditions including the effect on the different soft-tissues (tendons and ligaments, muscles), bones and neuro-vascular structures. The trainee should be aware on the different indications and techniques of ergotherapy.	Expects the trainee to be able to refer patients to ergotherapy - if indicated.	Appreciates the relevance of the potential positive impact of ergotherapy on different shoulder pathologies.	Ergo therapy shoulder Shoulder training Upper limb rehab
Massage	Teaches the trainee the principles of massage for the different shoulder conditions including the effect on the different soft-tissues (tendons and ligaments, muscles), bones and neuro-vascular structures. The trainee should be aware on the different indications and techniques of massage.	Expects the trainee to be able to refer patients to massage - if indicated.	Appreciates the relevance of the potential positive impact of massage on different shoulder pathologies.	Massage shoulder joint Mobilisation shoulder Muscle relaxation
Manual therapy	Teaches the trainee the principles of manual therapy for the different shoulder conditions including the effect on the different soft-tissues (tendons and ligaments, muscles), bones and neuro-vascular structures. The trainee should be aware on the different indications and techniques of manual therapy.	Expects the trainee to be able to refer patients to manual therapy - if indicated.	Appreciates the relevance of the potential positive impact of manual therapy on different shoulder pathologies.	Manual therapy shoulder Shoulder training Upper limb rehab
Lymph drainage	Teaches the trainee the principles of lymph drainage for the different shoulder conditions including the effect on the different soft-tissues (tendons and ligaments, muscles), bones and neuro-vascular structures. The trainee should be aware on the different indications and techniques of lymph drainage.	Expects the trainee to be able to refer patients to lymph drainage - if indicated.	Appreciates the relevance of the potential positive impact of lymph drainage on different shoulder pathologies.	Lymph drainage shoulder Swelling upper limb Venous insufficiency
S.4.2 Physical Immobilisation/ Orthoses, Prosthesis etc.				
Splints	Teaches the surgeon the principles behind correct use of splints for immobilisation and for assisted mobilization techniques. The surgeon should be aware of different protocols, length of therapy and possible complications.	Expects the surgeon to be able to perform a correct placement of shoulder splints understanding the importance of adequate padding to avoid pressure sores.	Is aware of the relevance of splints in the acute and chronic treatment of shoulder pathologies.	Splinting upper limb Conservative treatment Additional post OP procedure
Orthoses	Teaches the surgeon the principles behind correct use of orthoses for immobilisation and for assisted mobilization. The surgeon should be aware of different protocols, length of therapy and possible complications.	Expects the surgeon to be able to perform a correct placement of shoulder orthoses understanding the importance of adequate padding to avoid pressure sores.	Is aware of the relevance of orthoses in the acute and chronic treatment of shoulder pathologies.	Orthoses upper limb Conservative treatment Additional post OP procedure
Casts	Teaches the surgeon the principles behind correct use of casts for immobilisation. The surgeon should be aware of different protocols, length of therapy and possible complications.	Expects the surgeon to be able to perform a correct placement of shoulder casts understanding the importance of adequate padding to avoid pressure sores.	Is aware of the relevance of casts in the acute and chronic treatment of shoulder pathologies.	Casts upper limb Conservative treatment Additional post OP procedure
Braces	Teaches the surgeon the principles behind correct use of braces for immobilisation. The surgeon should be aware of different protocols, length of therapy and possible complications.	Expects the surgeon to be able to perform a correct placement of shoulder braces understanding the importance of adequate padding to avoid pressure sores.	Is aware of the relevance of braces in the acute and chronic treatment of shoulder pathologies.	Braces upper limb Conservative treatment Additional post OP procedure
S.4.3 Pain Relief Therapy				

Systemic pain therapy (oral)	Teaches the surgeon on the different available oral pain medications. Surgeon should be aware on the analgesic ladder to support different degrees of pain level according to WHO standards. Surgeon should understand the basics of pharmacology, interactions and side effects on different pain medications including but not limited to non-opioid analgesics (aspirin, acetaminophen, NSAIDS -selective and non selective), weak opioids, strong opioids and the use of adjuvants with opioid therapy.	Expects the surgeon to adequately treat shoulder pain for different conditions with or without surgery.	Is aware of the high relevance of oral systemic pain therapy in the acute and chronic treatment of shoulder pathologies.	Pain killer Pain medication Morphine NSAR Cortisone WHO scheme
Systemic pain therapy (intravenous)	Teaches the surgeon on the different available intravenous pain medications. Surgeon should be aware on the analgesic ladder to support different degrees of pain level according to WHO standards. Surgeon should understand the basics of pharmacology, interactions and side effects on different pain medications including but not limited to non-opioid analgesics (aspirin, acetaminophen, NSAIDS -selective and non selective), weak opioids, strong opioids and the use of adjuvants with opioid therapy.	Expects the surgeon to adequately treat shoulder pain for different conditions with or without surgery.	Is aware of the high relevance of intravenous systemic pain therapy in the acute and chronic treatment of shoulder pathologies.	Pain killer Pain medication Morphine NSAR Cortisone WHO scheme
Injections	Teaches the surgeon the principles behind injections. This should include understanding the pharmaceutical knowledge of the injected products medication, the indications, contraindications and management of possible adverse reactions and complications. Surgeon should be aware on the specific techniques for injection including the importance of appropriate sterility techniques and the use of adjuvant imaging techniques.	Expects the surgeon to be able to perform a safe injection around the shoulder, emphasizing the use of a sterile technique and understanding the availability of imaging techniques to increase the precision of the injection.	Is aware of the high relevance of injections in the acute and chronic treatment of shoulder pathologies.	Shoulder injection subacromial Shoulder injection capsule Shoulder injection subacromial
Pain catheters	Teaches the surgeon the principles behind the safe use of pain catheters, including care of catheter, the different medications used and existing pain protocols. The surgeon should be knowledgeable with the possible complications of catheter therapy.	Expects the surgeon to be able to safely use pain catheters for pain management.	Is aware of the high relevance of pain catheters in the acute and chronic treatment of shoulder pathologies.	Interscalene catheter Pain therapy Post op pain management
S.4.4 Conservative Fracture Treatment				
Immobilization	Teaches the surgeon the principles behind immobilisation techniques. The surgeon needs to understand the possible complications and how to avoid and detect them.	Expects the surgeon to be able to adequately immobilize a shoulder joint understanding the importance of adequate padding to avoid pressure sores.	Is aware of the high relevance of immobilization in the acute and chronic treatment of shoulder pathologies.	Postoperative therapy Splinting, bracing, orthoses
Physiotherapy	Teaches the trainee the principles of physiotherapy for conservative treatment of shoulder fractures. The trainee should be aware on the different indications and techniques of physiotherapy.	Expects the trainee to be able to refer patients to physiotherapy.	Appreciates the relevance of the potential positive impact of physiotherapy on conservative fracture treatment of the shoulder.	Physiotherapy shoulder joint Mobilisation shoulder Stretching shoulder
S.5 Shoulder Operative				
	Knowledge	Skill	Attitude	Keywords
S.5.1 Arthroscopy				
Diagnostic arthroscopy	Teaches the indications for Diagnostic arthroscopy and explain the principles to do it Lists the anatomical landmarks, position of the patient, standard portals, normal steps to evaluate the anatomical structures recognising the normal or the pathologic one	Expects the surgeon to be able to perform the arthroscopically evaluation of all the structures in the subacromial space and in the intraarticular area .	Appreciates the normal anatomy and structures, the anatomical variants and the pathologic	Arthroscopy shoulder Diagnosis shoulder Arthroscopic treatment shoulder

Ligament repair	Teaches the indications for ligaments repair and explain the principles. List the normal structures and the pathologic anatomy of the shoulder ligaments and the techniques to repair them	Expects the surgeon to be able to perform the most common techniques to repair the ligaments arthroscopically . Patient positioning, portals and technique to repair the capsulolabral lesions	Appreciates the labrum tears, the ligaments lesions of the anteroinferior glenohumeral ligament, and how to repair them	Repair of ligamentous structures Direct ligament repair Indirect ligament repair
Tendon repair	Teaches the indications for rotator cuff tears and explain the different types of them. List the normal and pathologic anatomy of the shoulder tendons and the techniques to repair the tendons arthroscopically	Expects the surgeon to be able to perform the technique to repair anatomically or partially the tendons tears arthroscopically . Patient positioning, portals and technique to repair the cuff tears	Appreciates the cuff tears, all the different types of tears degenerative, traumatic, how and when to treat them	Rotator cuff repair Suture anchors Sutures Repair techniques
Removal of loose bodies	Teaches the indications for loose bodies removal. List the cause and the type of loose bodies	Expects the surgeon to be able to perform the removal of all the loose bodies arthroscopically	Appreciates the normal arthroscopically anatomy of the shoulder, The intraarticular space, the inferior recess and the subscapularis recess where the loose bodies frequently are	Arthroscopy Open surgery Arthritis
Cartilage treatment	Teaches the indications for treatment of chondral lesions of the glenoid and the humeral head and explain them related to the ICRS classification. List the technique to treat them.	Expects the surgeon to be able to perform the basic treatments of the chondral lesions	Appreciates the normal arthroscopically anatomy of the shoulder, The evaluation of the integrity of the joint surface and the normal cartilage	CAM procedure AMIC Minced cartilage
Removal of osteophytes	Teaches the indications for removal of the osteophytes in the osteoarthritis	Expects the surgeon to be able to perform the resection of the osteophytes arthroscopically	Appreciates the osteophytes inferiorly to the humeral head and the degree of the osteoarthritis	CAM procedure Arthroscopy Arthritis
Arthrolysis	Teaches the indications for arthrolysis in case of stiffness of the joint, case of capsulitis / frozen shoulder, posttraumatic stiffness/ arthrofibrosis.	Expects the surgeon to be able to perform the circumferential arthrolysis resection of the capsule, starting from the rotator cuff interval.	Appreciates the capsulitis, arthrofibrosis,	Arthroscopy Open surgery Inflammation Stiffness
Synovectomy	Teaches the indications for synovectomy, knowledge of the most important pathology that involve the synovia	Expects the surgeon to be able to perform the Synovectomy arthroscopically assisted, using standard portals or accessories portals to reach all the area of the joint and perform a complete synovectomy	Appreciates the different types of synovia, normal and pathological	Arthroscopy Open surgery Synovialectomy
Fracture treatment	Teaches the indications for treating the intraarticular fractures of the glenoid, and of the humeral head. Teaches the indication also of the extraarticular fractures like Greater tuberosity avulsion,	Expects the surgeon to be able to perform the reduction and fixation of the most common fractures of the anteroinferior posteroinferior of the glenoid, and the fractures involving the greater tuberosity	Appreciates the different types of glenoid fractures and classifications. The different type of fractures of the tuberosities	Open surgery Arthroscopy Conservative treatment Nail Plate Arthroplasty
S.5.2 Reconstructive Procedures				
Open fracture treatment	Teaches the candidate the possibilities and limitations of open fracture treatment. Teaches the different techniques that can be used to fix fractures - pinning, screw fixation, plate and screw fixation, osteosuturing	Expects the surgeon to be able to perform the commonly available open surgical approaches to the shoulder joint, that are necessary for adequate open fracture repair.	Is aware of the high relevance of adequate open fracture treatment for patients quality of live and its high impact on socioeconomic costs.	Shoulder fracture Osteosynthesis shoulder Shoulder replacement
Open ligament repair	Teaches the candidate the possibilities and limitations of open ligament repair. Teaches the different techniques that can be used for ligament repair: transosseus fixation , ligament-to-ligament repair, anchor treatment. Knowledge of the location of the ligaments around the shoulder joint.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the shoulder joint, that are necessary for adequate open ligament repair.	Is aware of the high relevance of adequate open ligament repair for patients quality of live and its high impact on socioeconomic costs.	Open reconstruction shoulder Open ligament surgery Ligament repair

Open tendon repair	Teaches the candidate the possibilities and limitations of open tendon repair or partial repair. Teaches the different techniques that can be used for tendon repair: transosseus fixation , tendon-to-bone fixation, tendon-to-tendon repair, anchor treatment. Knowledge of the location of the tendons around the shoulder joint.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the shoulder joint, that are necessary for adequate open tendon repair.	Is aware of the high relevance of adequate open tendon repair for patients quality of live and its high impact on socioeconomic costs.	Open reconstruction tendon Open rotator cuff repair Rotator cuff
Open stabilization procedures	Teaches the candidate the possibilities and limitations of open stabilization procedures. Teaches the different approaches (anterior and posterior) and procedures that can be used for tendon repair: e.g. soft-tissue reconstruction (Bankart-repair, capsular shift, remplissage) and bone reconstruction (Latarjet, iliac crest, allografts).	Expects the surgeon to be able to perform the commonly available open surgical approaches and procedures to address instability of the shoulder joint.	Is aware of the high relevance of adequate open stabilization procedures for patients quality of live and its high impact on socioeconomic costs.	Open Bankart repair Open capsule shift Latarjet Bone block
Open arthrolysis	Teaches the candidate the possibilities and limitations of open arthrolysis procedures. Teaches the different techniques and approaches (anterior - posterior).	Expects the candidate to be able to perform the commonly available open surgical approaches and techniques to the shoulder joint, that are necessary for adequate open joint arthrolysis.	Is aware of the high relevance of adequate open joint release for patients quality of live and its high impact on socioeconomic costs.	Open capsulectomy Capsule release Capsule incision
S.5.3 Osteotomies				
Corrective Osteotomy prox. humerus	Teaches the surgeon the possibilities and limitations of corrective osteotomies of the proximal humerus. Teaches the surgeon how to make a pre-op planning (with or without 3D measurements) different techniques (open wedge, closing wedge) (with or without a 3D guide), approaches and fixation techniques.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the shoulder joint, that are necessary for adequate corrective humerus osteotomies.	Is aware of the potentially high relevance of adequate corrective osteotomy of the proximal humerus for patients quality of live.	Rotational osteotomy Open wedge osteotomy Closing wedge osteotomy
Corrective Osteotomy dist. humerus	Teaches the surgeon the possibilities and limitations of corrective osteotomies of the distal humerus. Teaches the surgeon how to make a pre-op planning (with or without 3D measurements) different techniques (open wedge, closing wedge) (with or without a 3D guide), approaches and fixation techniques.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the shoulder joint, that are necessary for adequate corrective humerus osteotomies.	Is aware of the potentially high relevance of adequate corrective osteotomy of the distal humerus for patients quality of live.	Rotational osteotomy Open wedge osteotomy Closing wedge osteotomy
Corrective osteotomy Glenoid	Teaches the surgeon the possibilities and limitations of corrective osteotomies of the glenoid. Teaches the surgeon how to make a pre-op planning (with or without 3D measurements) different techniques (open wedge, closing wedge) (with or without a 3D guide), approaches and fixation techniques.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the shoulder joint, that are necessary for adequate corrective glenoid osteotomies.	Is aware of the potentially high relevance of adequate corrective osteotomy of the glenoid for patients quality of live.	Corrective anterior osteotomy glenoid Corrective posterior osteotomy glenoid Open wedge osteotomy Closing wedge osteotomy
S.5.4 Osteosyntheses				
Proximal humerus fractures	Teaches the surgeon the possibilities and limitations of osteosynthesis of proximal humerus fractures. The surgeon is taught the different techniques (plate and screw fixation, screw fixation, nail fixation, sutures fixation or k-wires depending on the type of fracture. The surgeon is taught the step by step approach how to reconstruct the intra-articular fragments in case of intra-articular fractures. The surgeon is taught the advantages and disadvantages of different surgical approaches (deltopectoral, deltoid split, MIPO, posterior approach).	Expects the surgeon to be able to perform the commonly available open surgical approaches to the proximal humerus, that are necessary for adequate fracture repair.	Is aware of the high relevance of adequate proximal humerus fractures repair for patients quality of live and its high impact on socioeconomic costs.	Osteosyntheses Proximal Humerus Fractures Plate Nail Arthroplasty Approach Fixation

Glenoid fractures	Teaches the surgeon the possibilities and limitations of osteosynthesis of glenoid fractures. The surgeon is taught the different techniques (plate and screw fixation or screws fixation). The surgeon is taught the step by step approach how to reconstruct the intra-articular fragments in case of intra-articular fractures. The surgeon is taught the advantages and disadvantages of different surgical approaches (deltopectoral and posterior approach).	Expects the surgeon to be able to perform the commonly available open surgical approaches to the glenoid, that are necessary for adequate dislocation fracture repair.	Is aware of the high relevance of adequate glenoid fractures repair for patients quality of live and its high impact on socioeconomic costs.	Osteosyntheses Glenoid Fractures Indication Plate Arthroplasty Approach Fixation
Scapula fractures	Teaches the surgeon the possibilities and limitations of osteosynthesis of scapula fractures. The surgeon is taught the different techniques (plate and screw fixation, plate contouring and plate position) depending on the type of fracture. The surgeon is taught the advantages and disadvantages of different surgical approaches (Judet, Modified Judet, posterior approach).	Expects the surgeon to be able to perform the commonly available open surgical approaches to the scapula joint, that are necessary for adequate fracture repair.	Is aware of the high relevance of adequate scapula fractures repair for patients quality of live and its high impact on socioeconomic costs.	Osteosyntheses Scapula Fractures Indication Approach Fixation
Clavicle fractures	Teaches the surgeon the possibilities and limitations of osteosynthesis of clavicle fractures. The surgeon is taught the different techniques (plate and screw fixation, tension band, intramedullary nails or suture fixation) and its different indications.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the clavicle, that are necessary for adequate fracture repair.	Is aware of the high relevance of adequate clavicle fractures repair for patients quality of live and its high impact on socioeconomic costs.	Osteosyntheses Clavicle Fractures Indication Plate Intramedullary pin Approach Fixation
Dislocation fractures	Teaches the surgeon the possibilities and limitations of osteosynthesis of dislocation fractures. Teaches the surgeon closed and open reduction techniques for the dislocation. Teaches the surgeon step-by-step approach to stabilize the glenohumeral joint with different osteosynthesis techniques.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the shoulder joint, that are necessary for adequate dislocation fracture repair.	Is aware of the high relevance of adequate dislocation fracture repair for patients quality of live and its high impact on socioeconomic costs.	Osteosyntheses Dislocation Fractures Plate Nail Arthroplasty Approach Fixation
S.5.5 Resections				
AC-Joint resection	Teaches the candidate the indications and contra-indications for AC joint resection. Teaches pre-operative assessment both clinical and radiological .Teaches the candidate open surgical and arthroscopic techniques. Teaches post operative treatment . Teaches complications related to the procedure	Expects the surgeon to be able to perform adequate pre-operative assessment and planning. Be competent in open and arthroscopic techniques .Be aware of complications and prevention of same .	Appreciates the relevance of AC joint resection the necessity for proper diagnostics , adequate assessment and importance of careful surgical technique and rehabilitation.	Mumford AC resection Arthroscopy AC joint Open AC resection
SC-Joint resection	Teaches the candidate the indications and contra-indications for SC-joint resection. Teaches pre-operative assessment both clinical and radiological .Teaches the candidate open surgical technique and importance of adjacent vascular structures.. Teaches post operative treatment . Teaches complications related to the procedure	Expects the surgeon to be able to perform adequate pre-operative assessment and planning. Be aware of surgical technique .Be aware of complications and prevention of same .	Appreciates the relevance of SC joint resection the necessity for proper diagnostics , adequate assessment and importance of careful surgical technique and rehabilitation.	SC resection Open AC resection
Humeral Head resection	Teaches the candidate the indications and contra-indications for humeral head resection. Teaches pre-operative assessment both clinical and radiological .Teaches the candidate open surgical techniques. Teaches post operative treatment . Teaches complications related to the procedure	Expects the surgeon to be able to perform adequate pre-operative assessment and planning. Be aware of surgical technique .Be aware of complications and prevention of same .	Appreciates the relevance of humeral head resection the necessity for proper diagnostics , adequate assessment and importance of careful surgical technique and rehabilitation.	Necrosis Infection Replacement Girdle stone Sine-sine situation
Proximal Humerus resection	Teaches the candidate the indications and contra-indications for proximal humerus resection. Teaches pre-operative assessment both clinical and radiological .Teaches the candidate open surgical techniques. Teaches post operative treatment . Teaches complications related to the procedure	Expects the surgeon to be able to perform adequate pre-operative assessment and planning. Be aware of surgical technique .Be aware of complications and prevention of same .	Appreciates the relevance of proximal humerus resection . The necessity for proper diagnostics , adequate assessment and importance of careful surgical technique and rehabilitation.	Necrosis Infection Replacement Girdle stone Sine-sine situation
S.5.6 Endoprosthetics				

Anatomic Total shoulder arthroplasty	Understands history of development of design of anatomic TSR .Understands material properties of components including stem ,humeral head bearing surfaces, glenoid component. Understand concepts effect of design on biomechanics including humeral head size, offset, version. Be proficient in preoperative assessment including necessary radiological assessment and preoperative planning	Expects the surgeon to be able to understand indications and limitations of Anatomic TSA. Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. Interpreted advanced imaging and use operative planning software. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for ATSA. Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	Shoulder replacement shoulder arthroplasty Glenoid Anatomic
Hemiarthroplasty	Understands history of development of design of hemiarthroplasty .Understands material properties of components including stem ,humeral head bearing surfaces, and soft tissue balancing . Understand concepts effect of design on biomechanics including humeral head size, offset, version. Be proficient in preoperative assessment including necessary radiological assessment and preoperative planning . Be aware of potential Contraindications.	Expects the surgeon to be able to understand indications and limitations of hemiarthroplasty. Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. Interpreted advanced imaging and use operative planning software. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for Hemiarthroplasty. Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	Humeral head replacement Resurfacing Hemiarthroplasty
Reverse shoulder arthroplasty	Understands history of development of design of reverse TSR .Understands material properties of components including stem ,humeral head bearing surfaces, glenoid component. Understand biomechanical differences between commercially available implant systems. Under stand concepts including lateralisation, deltoid wrap, scapular notching,. Understand risks and benefits of different implant philosophies. Be proficient in preoperative assessment including necessary radiological assessment and preoperative planning	Expects the surgeon to be able to understand indications and limitations of Reverse TSA. Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. Interpreted advanced imaging and use operative planning software. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for RTSA. Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	Grammont Reverse arthroplasty Reverse replacement
Resurfacing arthroplasty	Understands history of development of design of anatomic TSR .Understands material properties of components including stem ,humeral head bearing surfaces, glenoid component. Understand concepts effect of design on biomechanics including humeral head size, offset, version. Be proficient in preoperative assessment including necessary radiological assessment and preoperative planning	Expects the surgeon to be able to understand indications and limitations of resurfacing . Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. Interpreted advanced imaging and use operative planning software. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for Resurfacing arthroplasty. Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	Humeral surface replacement Arthroplasty Resurfacing
Partial resurfacing arthroplasty	Understands history of development of design of partial resurfacing TSR .Understands material properties of components including stem ,humeral head bearing surfaces, glenoid component. Understand concepts effect of design on biomechanics including humeral head size, offset, version. Be proficient in preoperative assessment including necessary radiological assessment and preoperative planning	Expects the surgeon to be able to understand indications and limitations of partial surface arthroplasty . Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. Interpreted advanced imaging and use operative planning software. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for Partial Resurfacing Arthroplasty. Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	Hemi-resurfacing Partial head replacement Surface replacement

Revision arthroplasty	Understands history of development of design of Revision Shoulder arthroplasty . Understand modes of failure on both glenoid and humeral components. Understand classification and challenges of types of glenoid bone defects. Understand classification and challenges of types of humeral loosening. Understand issues in terms of implant removal i.e. humeral osteotomies and other techniques. Understand both biological and prosthetic replacement of bone defects. Understand complication profile associated with various revision options	Expects the surgeon to be able to understand indications and limitations of Revision TSA. Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. Interpret advanced imaging and use operative planning software. Anticipate requirement for advanced instrumentation, necessary prosthetic equipment and possible use of biological material. Execute work up for infection. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for Revision Total Shoulder Replacement. Appreciates all components of preoperative planning. Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	Revision shoulder arthroplasty Revision surgery Infection Loosening Periprosthetic fracture
Allograft Prosthetic Composite	Understands biological and biomechanical concepts of Allograft Prosthetic Composite. Understands material properties of components including stem ,humeral head bearing surfaces, glenoid component. Understand concept of composite of allograft and prosthesis and consequences of non union /bone resorption and soft tissue failure.	Expects the surgeon to be able to understand indications and limitations of Allograft Prosthetic Composite . Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. Interpret advanced imaging and use operative planning software. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for Allograft Prosthetic Composite. Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	APC Transplantation bone humerus Revision arthroplasty Bone loss humerus
Tumor prosthetics	Understands the design and biomechanics of tumour prosthesis including modularity, biomaterials and fixation techniques .. Be proficient in preoperative assessment including necessary radiological assessment and preoperative planning	Expects the surgeon to be able to understand indications and limitations of Tumour prosthesis . Understand limitations and contraindications. Perform adequate shoulder examination with particular reference to range of motion. interpret advanced imaging and use operative planning software. Execute appropriate surgical approach and select appropriate components. Execute careful soft tissue management . Supervise appropriate rehabilitation and follow up;	Appreciates the indications and contraindications for Tumour prosthesis . Appreciates importance of preoperative planning and component selection. Appreciates common complications and their management	Replacement proximal humerus Replacement scapula Mega prosthesis
S.5.7 Soft Tissues (Tendons/ Nerves/ Vessels etc..)				
Ligament repair	Teaches the candidate the possibilities and limitations of ligament repair. The candidate is taught when there is an indication for ligament repair or when conservative treatment should be proposed. The candidate is taught on the anatomical landmarks of the attachment of the ligaments and on the rehabilitation program after ligament repair	Expects the candidate to be able to perform the commonly available surgical approaches to the shoulder joint, that are necessary for stable ligament repair and to be capable of various techniques for ligament fixation.	Is aware of the high relevance of ligament repair for patients quality of live and its potentially high impact on socioeconomic costs.	Reconstruction shoulder Ligament surgery Ligament repair
Tendon Repair	Teaches the candidate the possibilities and limitations of tendon repair. The candidate is taught when there is an indication for tendon repair or when conservative treatment should be proposed. The candidate is taught on the anatomical landmarks of the attachment of the ligaments and on the rehabilitation program after ligament repair	Expects the candidate to be able to perform the commonly available surgical approaches to the shoulder joint, that are necessary for stable tendon repair and to be capable of various techniques for tendon fixation.	Is aware of the high relevance of tendon repair for patients quality of live and its potentially high impact on socioeconomic costs.	Reconstruction tendon Rotator cuff repair Rotator cuff
Bankart repair	Teaches the candidate the possibilities and limitations of a Bankart repair. The candidate is taught when there is an indication for this operation or when conservative treatment should be proposed. The candidate is taught on the anatomical landmarks of the attachment of the labrum and its associated lesions and on the rehabilitation program after the repair.	Expects the candidate to be able to perform the commonly available surgical approaches to the shoulder joint, that are necessary for doing a Bankart repair. The candidate should be capable of various techniques how to perform a Bankart repair (arthroscopic, open, with anchors, etc.).	Is aware of the high relevance of Bankart repairs for patients quality of live and its potentially high impact on socioeconomic costs.	Bankart Repair Bankart lesion Labrum repair

Capsular shift	Teaches the candidate the possibilities and limitations of capsular shifts. The candidate is taught when there is an indication for this operation or when conservative treatment should be proposed. The candidate is taught on the anatomy of the capsule and its associated lesions and on the rehabilitation program after the operation.	Expects the candidate to be able to perform the commonly available surgical approaches to the shoulder joint, that are necessary for doing a capsular shift. The candidate should be capable of various techniques how to perform a capsular shift (arthroscopic, open, etc.).	Is aware of the high relevance of capsular shifts for patients quality of live and its potentially high impact on socioeconomic costs.	T-shift Shoulder instability Capsular shift Capsule reconstruction
Tendon transfer	Teaches the candidate the possibilities and limitations of tendon transfers. The candidate is taught when there is an indication for this operation or when conservative treatment should be proposed. The candidate is taught which muscles and tendons may be useful for a transfer in different conditions. The candidate should be aware on the rehabilitation program after the operation.	Expects the candidate to be able to perform the commonly available surgical approaches to the shoulder joint, that are necessary for doing tendon transfers. The candidate should be capable of the various muscles and tendons that can be used for a transfer and which techniques may be applicable (arthroscopic, open, etc.).	Is aware of the high relevance of tendon transfers on the shoulder for patients quality of live and its potentially high impact on socioeconomic costs.	Latissimus dorsi transfer Lower trapezius transfer Pectoralis major transfer
S.5.8 Amputations				
Arm amputation	Teaches the candidates the possibilities of arm amputations. The candidate is taught in the rare indications for this invasive and definitive procedure. Also, the candidate is taught in sharing help and support for patients during the aftercare, especially focusing on neurogenic pain as well as psychological help for mental consequences of the loss of limb. The candidate has to know about prosthetic options (traditional and modern as well as experimental) to offer the patient options for the future.	Expects the candidate to know the key anatomical structures and to be able to dissect them in a safe manner. Also expects the candidate to be able to ligate major vessels of the upper extremity and to handle nerves during amputation surgery.	Appreciates the high relevance of profound understanding and knowledge of arm amputations.	Amputation upper limb Salvage surgery Exarticulation
Shoulder exarticulation	Teaches the candidate the possibilities of shoulder exarticulations. The candidate is taught in the rare indications for this invasive and definitive procedure. Also, the candidate is taught in sharing help and support for patients during the aftercare, especially focusing on neurogenic pain as well as psychological help for mental consequences of the loss of limb. The candidate has to know about prosthetic options (traditional and modern as well as experimental) to offer the patient options for the future.	Expects the candidate to know the key anatomical structures and to be able to dissect them in a safe manner. Also expects the candidate to be able to ligate major vessels of the upper extremity and to handle nerves during amputation surgery.	Appreciates the high relevance of profound understanding and knowledge of shoulder exarticulations.	Amputation upper limb Salvage surgery Exarticulation
4-Quarter Amputation	Teaches the candidate the possibilities of 4-quarter-amputations. The candidate is taught in the rare indications for this invasive and definitive procedure. Also, the candidate is taught in sharing help and support for patients during the aftercare, especially focusing on neurogenic pain as well as psychological help for mental consequences of the loss of limb. The candidate has to know about prosthetic options (traditional and modern as well as experimental) to offer the patient options for the future.	Expects the candidate to know the key anatomical structures and to be able to dissect them in a safe manner. Also expects the candidate to be able to ligate major vessels of the upper extremity and to handle nerves during amputation surgery.	Appreciates the high relevance of profound understanding and knowledge of shoulder exarticulations.	Amputation upper limb Salvage surgery Exarticulation
S.5.9 Arthrodesis				
Glenohumeral arthrodesis	Teaches the candidate the possibilities and limitations of shoulder arthrodesis. The candidate is taught on the correct position of fixation. The candidate is taught the use of internal and external fixation	Expects the candidate to know the key anatomical structures around the shoulder and to be able to dissect them in a safe manner. Also expects the candidate to be able to perform stable osteosynthetic techniques, to gain stable fusion of the joint.	Is aware of the significant implications of glenohumeral arthrodesis on the quality of life of the patient, and is aware of the rarity of the indications for glenohumeral arthrodesis.	Arthrodesis Glenohumeral Function Impairment Indication Fusion