

Basic Learning Objectives				
	Knowledge	Skill	Attitude	Keywords
<b>E.1 Basic Science</b>				
<b>E.1.1. Basic Science</b>				
<b>Anatomy</b>	Teaches basic and detailed anatomy of the elbow and its surrounding structures. Special Emphasis shall be laid on the neuro-anatomy around the elbow (Radial, ulnar and median nerves).	Expects the surgeon to be able to apply basic and profound anatomical knowledge onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of elbow anatomy for proper diagnostics and conservative as well as operative treatment of elbow pathologies.	Elbow Anatomy Structure
<b>Biomechanics</b>	Teaches basic and detailed biomechanics of the elbow. Special Emphasis shall be laid on instability patterns -posterolateral rotatory instability -posteromedial instability -varus / valgus instability -longitudinal instability of the forearm	Expects the surgeon to be able to apply basic and profound biomechanical knowledge onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of elbow biomechanics for proper diagnostics and treatment of elbow pathologies.	Elbow Biomechanics Function Structure
<b>Surgical approaches</b>	Teaches basic and detailed knowledge on the available approaches to the elbow joint, which can be separated in medial, lateral, dorsal and ventral approaches. The approaches are learned with special respect for the position and course of the major neuro-vascular structures at the elbow. -medial approaches (Hotchkiss, Sulcus-splitting) -lateral approaches (Kocher, EDC-split, Kaplan) -dorsal approaches (Triceps-preserving, Triceps-off, Triceps-peel) -ventral approaches	Expects the surgeon to be able to apply basic and profound knowledge of surgical approaches onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of elbow surgical approaches for proper surgical treatment of elbow pathologies.	Elbow Surgery Dissection Approach
<b>Epidemiology</b>	Teaches basic and detailed knowledge on epidemiology of elbow pathologies.	Expects the surgeon to be able to apply basic and profound knowledge of epidemiology onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of elbow pathology epidemiologies.	Elbow Epidemiology Patients Cases
<b>E.1.2. Diagnostics</b>				
	Knowledge	Skill	Attitude	Keywords
<b>E.1.2.1 Imaging</b>				
<b>Sonography / Ultrasound</b>	Teaches basic and detailed knowledge on the theoretical basics of ultrasound and its application in the diagnostics and treatment of elbow pathologies. Key structures: radial head, olecranon fossa, ulno-humeral joint gap, medial and lateral joint gap, medial and lateral ligament complex, ulnar nerve, radial nerve, median nerve, brachial artery	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 elbow ultrasound investigations.	Ultrasound Anatomical landmarks Elbow diagnostics

<b>Nuclear medicine / Scintigraphy</b>	Teaches basic and detailed knowledge on the theoretical basics of nuclear medicine and its application in the diagnostics and treatment of elbow pathologies.	Expects the surgeon to be able to apply basic and profound knowledge of Nuclear medicine onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of nuclear medicine for diagnostics and treatment of elbow pathologies.	Bone Scintigraphy Osteochondritis Dissecans Lateral Epicondylitis Total Elbow Arthroplasty Septic Loosening
<b>MRI/ MR Arthrography</b>	Teaches basic and detailed knowledge on the theoretical basics of MRI and MR Arthrography and its application in the diagnostics and treatment of elbow pathologies.	Expects the surgeon to be able to apply basic and profound knowledge of MRI Imaging onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of MRI and MR Arthrography for diagnostics and treatment of elbow pathologies.	MRI MR Arthrography Inflammation Soft Tissues
<b>CT/ CT Arthrography</b>	Teaches basic and detailed knowledge on the theoretical basics of CT and CT Arthrography and its application in the diagnostics and treatment of elbow pathologies.	Expects the surgeon to be able to apply basic and profound knowledge of CT Imaging onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of CT and CT Arthrography for diagnostics and treatment of elbow pathologies.	CT CT Arthrography Bone Fracture
<b>DEXA</b>	Teaches basic and detailed knowledge on the theoretical basics of Bone Density Measurements and its application in the diagnostics and treatment of elbow pathologies.	Expects the surgeon to be able to apply basic and profound knowledge of Bone Density Measurements onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of Bone Density Measurements for diagnostics and treatment of elbow pathologies.	Bone mineral density children and adolescents dual-energy X-ray absorptiometry elbow
<b>E.1.2.2 Laboratory Medicine</b>				
<b>Blood parameters</b>	Teaches basic and detailed knowledge on the theoretical basics of Blood Parameters and its application in the diagnostics and treatment of elbow pathologies. -CRP -WBC -PCT -IL-6 -rheumatoid factors -anti-CCP -ESR	Expects the surgeon to be able to apply basic and profound knowledge of blood diagnostics onto treatment of elbow pathologies.	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
<b>Blood cultures</b>	Lists the possibilities and value of Blood Cultures in the diagnosis of systemic infections accompanying elbow pathologies.	Expects the surgeon to be able to apply basic and profound knowledge of microbiological blood diagnostics onto treatment of elbow pathologies.	Appreciates the high relevance of profound understanding and knowledge of Blood Cultures for diagnostics and treatment of systemic infections accompanying elbow pathologies.	Microbiology Resistance Organism Antibiotics Evasion
<b>E.1.2.3 Puncture and biopsy</b>				

<b>Histology</b>	Teaches the basic knowledge of the use of histology for the identification of elbow 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 aseptic technique.	Appreciates the high relevance of profound understanding and knowledge of histology for diagnostics and treatment of systemic infections accompanying elbow pathologies.	Histology Histopathology Synovium Sectioning
<b>Synovial analysis</b>	Teaches the basic knowledge of the use of synovial analysis for the identification of elbow 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 aseptic technique.	Appreciates the high relevance of synovial analysis for diagnostics and treatment of infectious and inflammatory elbow pathologies.	Arthrocentesis Synovium Analysis Inflammation Rheumatic disease
<b>Microbiology</b>	Lists the possibilities and limitations of the essential diagnostic tool of microbiology, when dealing with pathologies around the elbow.	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 aseptic technique.	Appreciates the high relevance of microbiology for diagnosis of pathogens and antibiotic resistances in the treatment of infectious elbow pathologies.	Microbiology Resistance Organism Antibiotics
<b>E.1.2.4 Investigation Techniques</b>				
<b>Arthroscopy</b>	Teaches the surgeon the possibilities and limitations of arthroscopy in the diagnosis of elbow pathologies. The surgeon is taught on how to respect the critical role of sterility and hygiene when applying arthroscopy to the elbow joint.	Expects the surgeon to be able to perform diagnostic elbow arthroscopy safely, while respecting the complex anatomy of the elbow joint and its surrounding neuro-vascular structures.	Appreciates the relevance of diagnostic arthroscopy for diagnosis of elbow pathologies, by that guiding the according treatment..	Elbow Arthroscopy Diagnosis Visualization Hygiene
<b>Nanoscope</b>	Teaches the surgeon the possibilities and limitations of Nano arthroscopy in the diagnosis of elbow pathologies. The surgeon is taught on how to respect the critical role of sterility and hygiene when applying Nano arthroscopy to the elbow joint.	Expects the surgeon to be able to perform diagnostic elbow Nano arthroscopy safely, while respecting the complex anatomy of the elbow joint and its surrounding neuro-vascular structures.	Appreciates the relevance of diagnostic Nano arthroscopy for diagnosis of elbow pathologies, by that guiding the according treatment..	Elbow Nanoscope Nano Arthroscopy Diagnosis Visualization Hygiene
<b>Open surgical exploration</b>	Teaches the possibilities and limitations of open surgical exploration as a diagnostic tool for elbow 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 elbow 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 elbow pathologies.	Elbow Open surgical exploration Diagnosis Visualization Hygiene
<b>E.1.3. Elbow Pathologies</b>				
	<b>Knowledge</b>	<b>Skill</b>	<b>Attitude</b>	<b>Keywords</b>
<b>E.1.3.1 Infections</b>				
<b>Primary/Secondary Empyema</b>	Lists the causes for empyema of the elbow joint and differentiates in primary and secondary causes. Teaches the available techniques for correct diagnosis and efficient treatment of such infectious pathologies.	Expects the surgeon to be able to perform minimally-invasive procedures or to do open surgical approaches to the elbow joint to evacuate empyema, rinsing the joint sufficiently, debriding it and to take samples for diagnostic measures.	Appreciates the relevance of the correct diagnosis and treatment of primary and secondary empyema of the elbow.	Septic arthritis Elbow empyema Osteomyelitis Elbow Infection

<b>Peri-prosthetic Infection</b>	Teaches the profound knowledge of this potentially devastating complication of prosthetic replacement around the elbow. Lists the different causes, risks and predispositions for peri-prosthetic joint infections. Gives insight into common re-prosthetic infection treatment protocols. Differentiates in the different underlying prostheses: -Total Elbow Arthroplasty (TEA) -Hemi Arthroplasty (HA) -Radial Head Arthroplasty (RHA) -Capitulum Replacement Arthroplasty (CRA)	Expects the surgeon to be able to perform revision maneuvers to explant prostheses while preserving bone stock, evacuate empyema, rinsing the joint sufficiently, debriding it and to take samples for diagnostic measures.	Appreciates the relevance of thorough revision techniques and therapeutic protocols for the correct diagnosis and treatment of peri-prosthetic infections around the elbow.	Elbow infection periprosthetic joint infection total elbow arthroplasty
<b>Infection of Osteosynthesis</b>	Teaches the profound knowledge of this potentially devastating complication of osteosynthetic reconstruction around the elbow. Lists the different causes, risks and predispositions for peri-osteosynthetic joint infections. Clarifies on how to diagnose infected pseudarthrosis.	Expects the surgeon to be able to perform revision maneuvers of elbow osteosynthesis, to know the different implants, to be able to explant these implants while preserving bone stock, evacuate empyema, rinsing the joint sufficiently, debriding it and to take samples for diagnostic measures.	Appreciates the relevance of thorough revision techniques and therapeutic protocols for the correct diagnosis and treatment of peri-osteosynthetic infections around the elbow.	Infection after fracture fixation Implant-related infection Infected non-union Complications Biofilm Antibiotic therapy
<b>E.1.3.2 Nerve Pathologies</b>				
<b>Ulnar Nerve Syndrome</b>	Lists the multitude of causes for ulnar nerve syndrome. Differentiates in primary and secondary causes, as well as iatrogenic causes of ulnar nerve pathologies.	Expects the surgeon to be able to perform neurolysis of the ulnar nerve. Expects the surgeon to be able to perform revision maneuvers of the ulnar nerve and to be able to perform transposition techniques. Demands the surgeon to be able to perform thorough coagulation of blood vessels at the medial intermuscular septum.	Appreciates the relevance of ulnar nerve syndrome and of thorough surgical techniques and therapeutic protocols for the correct diagnosis and treatment of ulnar nerve syndrome at the elbow.	Ulnar nerve Ulnar tunnel syndrome Compressive neuropathy
<b>Snapping Ulnaris Syndrome</b>	Teaches the background of snapping ulnar syndrome, with looking into its etiology. Differentiates in constitutional causes, explains the role of the triceps muscle in that context.	Expects the surgeon to be able to perform neurolysis of the ulnar nerve. Expects the surgeon to be able to perform revision maneuvers of the ulnar nerve and to be able to perform transposition techniques. Demands the surgeon to be able to perform thorough coagulation of blood vessels at the medial intermuscular septum. Expects the surgeon to be able to perform partial resection of the medial head of the triceps.	Appreciates the relevance of snapping ulnar syndrome and of thorough surgical techniques and therapeutic protocols for the correct diagnosis and treatment of snapping ulnar syndrome.	Cubital tunnel cubitus varus operative technique snapping triceps syndrome ulnar neuritis
<b>Radial Tunnel Syndrome / Supinator Syndrome</b>	Lists the causes for radial tunnel syndrome / supinator syndrome. Teaches its correct diagnosis and treatment possibilities.	Expects the surgeon to be able to perform neurolysis of the radial nerve. Expects the surgeon to be able to perform revision maneuvers of the radial nerve. Demands the surgeon to be able to dissect Frohe's arcade.	Appreciates the relevance of ulnar nerve syndrome and of thorough surgical techniques and therapeutic protocols for the correct diagnosis and treatment of ulnar nerve syndrome at the elbow.	Compression Diagnosis Radial Tunnel Syndrome Treatment Nerve pathology
<b>Pronator Teres Syndrome</b>	Lists the causes for pronator teres syndrome. Teaches its correct diagnosis and treatment possibilities and how to differentiate it from other median nerve syndromes.	Expects the surgeon to be able to perform neurolysis of the median nerve. Expects the surgeon to be able to perform revision maneuvers of the median nerve. Demands the surgeon to be able to dissect the pronator muscle.	Appreciates the relevance of pronator teres syndrome and of thorough surgical techniques and therapeutic protocols for the correct diagnosis and treatment of pronator teres syndrome.	decompression pronator teres syndrome nerve compression nerve pathology

<b>E.1.3.3 Tumors</b>				
<b>Benign Bone Tumors / Osteoidosteoma</b>	Teaches the etiology and epidemiology of this very 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 at the elbow, the necessity for thorough diagnostics and careful surgical techniques for treatment.	osteoid osteoma elbow osteoblastic tumor neoplasia
<b>Primary malignant Tumors</b>	Lists the rare primary malignant bone tumors at the elbow, 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 at the elbow, the necessity for thorough diagnostics and careful surgical techniques for treatment, while adhering to established treatment algorithms.	benign bone tumour elbow malignant
<b>Metastatic Cancer</b>	Lists the possible primary malignancies that may cause metastatic disease to the elbow rare 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 at the elbow, the necessity for thorough diagnostics and careful surgical techniques for treatment, while adhering to established treatment algorithms.	Metastasis carcinoma malignant tumor elbow
<b>Benign Soft Tissue Lesions</b>	Lists the possible benign soft tissue lesions that may be encountered at the elbow rare 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 at the elbow, the necessity for thorough diagnostics and careful surgical techniques for treatment, while adhering to established treatment algorithms.	benign elbow soft tissue tumours
<b>E.1.3.4 Sports Injuries</b>				
<b>Ligamentous Dislocation</b>	Teaches the epidemiology of ligamentous elbow 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 elbow joint, its ligamentous stabilizers and the muscle origins 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 elbow instability after elbow dislocation, the necessity for proper diagnostics and therewith adequate indications for treatment.	dislocation elbow epidemiology indications refixation physiotherapy overhead
<b>Chronic Valgus Instability</b>	Teaches the epidemiology of chronic valgus instability. Displays the etiology: -trauma -attrition/overuse 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 elbow joint, its ligamentous stabilizers and the muscle origins to - if indicated - perform ligament reconstruction in the chronic setting.	Appreciates the relevance of chronic valgus instability of the elbow, the necessity for proper diagnostics and therewith adequate indications for treatment.	Elbow Athletes Ligaments Joint instability Reconstructive surgery
<b>Osteochondral Lesion</b>	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 minimally-invasive, arthroscopic and open approaches to the elbow joint to - if indicated - perform osteochondral debridement or cartilage repair strategies.	Appreciates the relevance of osteochondral lesions of the elbow, the necessity for proper diagnostics and therewith adequate indications for treatment.	osteochondral lesions osteochondritis dissecans elbow arthritis
<b>Medial Epicondylitis/Medial Elbow Pain</b>	Defines the pathology with its pathogenesis and epidemiology. Lists the currently available classification systems and treatment algorithms for medial epicondylitis. Presents the common indications for conservative/operative treatment, based on the present literature.	Expects the surgeon to be able to perform surgical minimally-invasive, arthroscopic and open approaches to the elbow joint to - if indicated - perform tendon debridement and refixation strategies.	Appreciates the relevance of medial epicondylitis of the elbow, the necessity for proper diagnostics and therewith adequate indications for treatment. Is aware of the special challenges in correctly diagnosing epicondylitis and differentiating it from other causes of medial elbow pain.	lateral elbow pain lateral epicondylitis tendinitis golfers elbow

<b>Lateral Epicondylitis/Lateral Elbow Pain</b>	Defines the pathology with its pathogenesis and epidemiology. Lists the currently available classification systems and treatment algorithms for lateral epicondylitis. Presents the common indications for conservative/operative treatment, based on the present literature.	Expects the surgeon to be able to perform surgical minimally-invasive, arthroscopic and open approaches to the elbow joint to - if indicated - perform tendon debridement and refixation strategies.	Appreciates the relevance of medial epicondylitis of the elbow, the necessity for proper diagnostics and therewith adequate indications for treatment. Is aware of the special challenges in correctly diagnosing epicondylitis and differentiating it from other causes of lateral elbow pain.	lateral elbow pain lateral epicondylitis tendinitis tennis elbow
<b>E.1.3.5 Trauma</b>				
<b>Radial Head Fracture</b>	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 elbow joint to - if indicated - perform repositioning, fixation and replacement of the radial head.	Appreciates the relevance of radial head fractures and its implications on elbow 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.	Internal Fixation Radial Head Medial Collateral Ligament Orthop Trauma Radial Head Fracture
<b>Proximal Ulna Fractures</b>	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 open approaches to the elbow joint to - if indicated - perform repositioning and fixation.	Appreciates the relevance of olecranon fractures and its implications on elbow 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.	coronoid process elbow stability Monteggia fracture Monteggia-like lesion olecranon proximal ulna fracture radial head
<b>distal humerus fractures</b>	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. Discusses the indications of nerve transposition. Teaches the high complication risks of elbow replacement surgery.	Expects the surgeon to be able to perform minimally-invasive, arthroscopic and open surgical approaches to the elbow joint to - if indicated - perform repositioning, fixation and replacement of the distal humerus.	Appreciates the relevance of distal humerus fractures and its implications on elbow 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.	Distal humerus fracture Fracture fixation Open reduction internal fixation Total elbow arthroplasty Anatomy Elbow
<b>Isolated Coronoid Fracture / PMRI</b>	Defines the pathology with its implications on elbow biomechanics and lists its epidemiology. Displays the available classifications systems and reports their limitations. Emphasizes the relevance of concomitant ligament injuries.	Expects the surgeon to be able to perform minimally-invasive, arthroscopic and open surgical approaches to the elbow joint to - if indicated - perform repositioning and fixation of the coronoid, as well as to perform refixation and reconstruction of the collateral ligaments..	Appreciates the relevance of coronoid fractures and its implications on elbow 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 and reconstruction.	Isolated coronoid fracture lateral collateral ligament magnetic resonance imaging fracture ligaments

<b>Terrible Triad</b>	Defines the pathology with its relevance for elbow biomechanics. Underlines the difference of the fracture patterns of the coronoid in regard to PMRI. Teaches the accompanying ligamentous injuries and the specific complications, like stiffness and heterotopic ossifications.	Expects the surgeon to be able to perform minimally-invasive, arthroscopic and open surgical approaches to the elbow joint to - if indicated - perform repositioning and fixation of the coronoid and the radial head, as well as to perform refixation and reconstruction of the collateral ligaments. Also, the surgeon must be able to deal with the ulnar nerve, which is to be protected during the procedure.	Appreciates the relevance of terrible triad injuries and its implications on elbow 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 and reconstruction.	Radial Head Coronoid Dislocation Elbow Stiffness Heterotopic Ossification
<b>Monteggia</b>				
<b>Essex-Lopresti</b>				
<b>E.1.3.6 Developmental disorders</b>				
<b>Chronic Radial Head Dislocation</b>	Teaches the etiology and epidemiology of this pathology. Differentiate between congenital dislocation and developmental dislocation. Lists the diagnostic modalities to differentiate it from acute traumatic lesions.	Expects the surgeon to be able to perform a surgical planning for an osteotomy and perform an open surgical approach to the elbow joint to perform the osteotomy and fixation. Also, the surgeon must be able to deal with the radial nerve, which is to be protected during the procedure.	Appreciates the relevance of Radial Head Dislocation and its implications on elbow 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 and osteotomy techniques.	Radial Head Dislocation Elbow Stiffness Heterotopic Ossification
<b>Cubitus Varus</b>	Teaches the etiology and epidemiology of this pathology. Offers recommendations for treatment algorithms.	Expects the surgeon to be able to perform a surgical planning for an osteotomy and perform an open surgical approach to the elbow joint to perform the osteotomy and fixation. Also, the surgeon must be able to deal with the ulnar nerve, which is to be protected during the procedure.	Appreciates the relevance of cubitus varus and its implications on elbow 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 and osteotomy techniques.	Angulation Deviation Elbow Stiffness Pain Trauma
<b>E.1.3.7 Inherent/growth associated</b>				
<b>Dysplasia</b>	Describes the causes of growth associated dysplasia of the distal humerus. Defines the symptomatology and significance. Defines the typical radiologic findings. Lists surgical treatment indications and timing. Lists possible complications and results of treatment.	Not every surgeon needs to be able to treat such complex pathologies surgically. However, he must be able to diagnose the pathology correctly. Also, he should be able to refer the patient to a specialized centre, where there is experience in the treatment of such pathologies.	Appreciates the relevance of varus/valgus malalignment and its implications on elbow biomechanics, the necessity for proper diagnostics and therewith adequate indications for treatment. Is aware of the special challenges in correctly choosing the method of correction and osteotomy techniques.	Elbow Deviation Function Pain
<b>Varus/ Valgus malalignment</b>	Describes the causes of growth associated cubitus varus (fe after supracondylar fracture) or valgus (fe after lateral condyle fracture). Describe the normal variation in valgus alignment. Defines the symptomatology and significance. Defines the typical radiologic findings. Lists surgical treatment indications and timing. Lists possible complications and results of treatment.	Expects the surgeon to be able to perform a surgical planning for an osteotomy.	Appreciates the relevance of varus/valgus malalignment and its implications on elbow 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 and osteotomy techniques.	Angulation Deviation Elbow Stiffness Pain Trauma

<b>Radioulnar synostosis</b>	Distinct between osteochondrosis of the capitellum (Panner's disease) and osteochondritis dissecans. Perform an evaluation on technical investigation to define the severity of the lesion. Offers recommendations for treatment algorithms.	Expects the surgeon to be able to perform a surgical planning for an osteotomy	Appreciates the relevance of radioulnar synostosis and its implications on elbow 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 and osteotomy techniques.	Radial Head Dislocation Elbow Fracture Healing Stiffness Heterotopic Ossification
<b>Osteochondrosis dissecans</b>	Distinct between osteochondrosis of the capitellum (Panner's disease) and osteochondritis dissecans. Perform an evaluation on technical investigation to define the severity of the lesion. Offers recommendations for treatment algorithms.	Expects the surgeon to be able to perform a surgical planning for an a'scopy or open treatment (debridement, fixation, grafting)	Appreciates the relevance of osteochondritis dissecans and its implications on elbow biomechanics, the necessity for proper diagnostics and therewith adequate indications for treatment. Is aware of the special challenges in correctly choosing the method of debridement or grafting	Cartilage Elbow Pain Overload Perfusion Necrosis
<b>E.1.3. 8 Caused by medical interventions</b>				
<b>Cartilage damage</b>	Teach the different causes of iatrogenic cartilage damage (punction, a'scopic treatment, open treatment) 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 able to perform a'scopy or open treatment (debridement, osteocapsular arthroplasty, elbow arthroplasty)	Appreciates the high relevance of cartilage injuries for joint integrity and adequate functionality.	Cartilage Elbow Pain Overload Perfusion Necrosis
<b>Infection</b>	Teach the different causes of iatrogenic infection (punction, a'scopic treatment, open treatment) 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 able to perform a surgical planning for an a'scopy or open treatment (debridement, synovectomy)	Appreciates the catastrophic consequences of joint infection for joint integrity and functionality.	Swelling Effusion Bacteria Redness
<b>Osteonecrosis</b>	Teach the different causes of osteonecrosis (medication like corticosteroids) 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 able to perform a'scopy or open treatment (debridement, osteocapsular arthroplasty, elbow arthroplasty)	Appreciates the potentially severe consequences of osteonecrosis of the elbow, leading to secondary arthritis, stiffness and pain.	Perfusion Pain Bone loss Bone
<b>E 1.3.9 Inflammatory/ Systemic diseases/ Bone metabolism</b>				
<b>Rheumatoid diseases</b>	Lists the diagnostic criteria for RA. Diagnoses RA. Explains the pharmacologic treatment of RA. Explains the elbow involvement in RA, its characteristics and the prognosis. Lists the indications of surgical and nonsurgical treatment.	Refers the patient to a rheumatologist when necessary. Performs surgical treatment as indicated	Becomes aware of the significance of giving disease-related information to the patient and relatives.	Chronic inflammatory pain Biologicals Treatment

<b>PVNS</b>	Diagnoses PVNS (nodular - diffuse) Explains the elbow involvement in PVNS, its characteristics and the prognosis. Lists the indications of surgical treatment and the risks of recurrence	Expects the surgeon to be able to perform minimally-invasive, arthroscopic and open surgical approaches to the elbow joint to - if indicated - perform synovectomy.	Becomes aware of the significance of giving disease-related information to the patient and relatives, specifically on the recurrence rate of the disease.	Swelling Joint Pain Chronic Malignoma
<b>Olecranon Bursitis</b>	Teaches the etiology and epidemiology of this pathology. Differentiate between septic and non-septic bursitis. Evaluate etiology (traumatic - non traumatic). Lists the indications of non-surgical and surgical treatment and the risks of recurrence.	Expects the surgeon to be able to perform a correct puncture of the bursa, drainage of pus and resection of the bursa in non-septic condition	Is aware of the correct indications for when to perform puncture, acute and delayed resection of the olecranon bursa, and when to treat it conservatively.	Bursa Swelling Pain Inflammatory traumatic
<b>E 1.3.10 Degenerative</b>				
<b>Osteoarthritis</b>	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.	Is able to perform the common surgical treatment alternatives for joint osteoarthritis, like arthroscopic debridement, resection arthroplasty and arthroplasty.	Is aware of the high relevance of osteoarthritis for patients quality of live and its high impact on socioeconomic costs.	Degeneration posttraumatic Pain Crepitus Cartilage
<b>Loose bodies</b>	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.	Is able to perform the common surgical treatment options for loose bodies, like open and arthroscopic loose body removal.	Is aware of possible effects of loose bodies on joint function and quality of live.	Locking Pain Effusion Removal Treatment
<b>Stiffness</b>	Defines the etiology (traumatic- atraumatic) (extrinsic - intrinsic causes) Defines the symptomatology and significance. Lists conservative treatment indications. Lists surgical treatment indications. Lists possible complications and results of treatment.	Is able to perform the common surgical treatment options for elbow stiffness, like open and arthroscopic surgery and is able to perform neuro-vascular release procedures.	Is aware of the severe effects of elbow stiffness on joint functionality and quality of live and knows about the possible improvements that can be gained by conservative and surgical treatment	Quality of Life Chronic Pain Functionality
<b>E1.4 Elbow Conservative</b>				
	<b>Knowledge</b>	<b>Skill</b>	<b>Attitude</b>	<b>Keywords</b>
<b>E. 1.4.1 Physical Therapy</b>				
<b>Physiotherapy</b>	Teaches the surgeon the principles behind physiotherapy for the different elbow conditions including the effect on the different tissues around the elbow, including bone, muscle, tendon, ligaments, and neurological structures. The surgeon should be knowledgeable on the different indications and techniques.	Is able to convey the common concepts of physiotherapy in the treatment of elbow pathologies.	Is aware of the immense positive impact that physiotherapy can have in the treatment of elbow pathologies.	Conservative Treatment Motion Intervention
<b>Ergo therapy</b>	Teaches the surgeon the principles behind ergo therapy including the promotion of self care and promotion of the use of the upper limb in the activities of daily living	Is able to convey the common concepts of Ergotherapy in the treatment of elbow pathologies.	Is aware of the immense positive impact that ergotherapy can have in the treatment of elbow pathologies.	Conservative Treatment Motion Intervention

<b>Massage</b>	Teaches the surgeon the principles behind massage techniques. The surgeon is taught on the basic massage techniques for safe mobilization of tissue and should be knowledgeable on the indications for its use	Is able to convey the common concepts of Massage Therapy in the treatment of elbow pathologies.	Is aware of the immense positive impact that massage can have in the treatment of elbow pathologies.	Conservative Treatment Motion Intervention
<b>Manual therapy</b>	Teaches the surgeon the principles behind manual therapy techniques. The surgeon should be knowledgeable on the effect of hand movements and skilled passive movement of the joint and the indications for its use.	Is able to convey the common concepts of Manual Therapy in the treatment of elbow pathologies.	Is aware of the immense positive impact that manual therapy can have in the treatment of elbow pathologies.	Conservative Treatment Mobilisation Intervention
<b>Lymphatic drainage</b>	Teaches the surgeon the principles behind lymph drainage techniques. The surgeon should be knowledgeable on the different application techniques and understand the possible complications and how to avoid and detect them.	Is able to convey the common concepts of Lymphatic drainage in the treatment of elbow pathologies.	Is aware of the immense positive impact that lymph drainage can have in the treatment of elbow pathologies.	Conservative Treatment Swelling Mobilisation Intervention
<b>E 1.4.2 Immobilisation/ Orthoses, Prosthesis etc.</b>				
<b>Splints</b>	Teaches the surgeon the principles behind correct use of splints for immobilization and for assisted mobilization techniques. The patient should understand the principles behind the use of, but not limited to, dynamic splinting and static progressive splinting. The surgeon should be knowledgeable with the different protocols, the length of therapy and to detect and treat possible complications.	Expects the surgeon to be able to perform a correct placement of elbow casting understanding the importance of adequate padding to avoid pressure sores	Is aware of the high relevance of splints in the acute and chronic treatment of elbow pathologies.	Stabilization Treatment Healing Protection
<b>Orthoses</b>	Teaches the surgeon the principles behind orthotic treatment. The surgeon should be knowledgeable of the appropriate indications, correct use and identification of complications	Expects the surgeon to be able to perform a correct placement of orthoses understanding the importance of adequate padding to avoid pressure sores	Is aware of the high relevance of splints in the acute and chronic treatment of elbow pathologies.	Stabilization Treatment Healing Protection
<b>Casts</b>	Teaches the surgeon the principles behind casting techniques. The surgeon is taught on the technique to apply plaster of paris correctly and alternatives like fiberglass. The surgeon should be knowledgeable of the appropriate indications, correct use and identification of complications	Expects the surgeon to be able to perform a correct placement of elbow casting understanding the importance of adequate padding to avoid pressure sores	Is aware of the high relevance of splints in the acute and chronic treatment of elbow pathologies.	Stabilization Treatment Healing Protection
<b>Braces</b>	Teaches the surgeon the principles behind bracing techniques. The surgeon should be knowledgeable of the appropriate indications, correct use and identification of complications	Expects the surgeon to be able to perform a correct placement of elbow braces understanding the importance of adequate padding to avoid pressure sores	Is aware of the high relevance of braces in the acute and chronic treatment of elbow pathologies.	Stabilization Treatment Healing Protection
<b>E 1.4.3 Pain Relief Therapy</b>				

<b>Systemic pain therapy (oral)</b>	Teaches the surgeon on the different available oral pain medications and should be knowledgeable on the analgesic ladder to support different degrees of pain level. The surgeon should understand the basics of pharmacology, interactions and side effects of the 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 and how to switch up and down the analgesia ladder.	Expects the surgeon to be able to design an appropriate initial pain treatment plan and adequately manage residual pain	Is aware of the high relevance of systemic pain therapy in the acute and chronic treatment of elbow pathologies.	Medication Pills Pain Treatment Alleviation
<b>Systemic pain therapy (intravenous)</b>	Teaches the surgeon on the different available intravenous pain medications and should be knowledgeable on the different intravenous pain medications including but not limited to multimodal pain medication treatment. The surgeon should understand the basics of pharmacology, interactions and side effects of the different intravenous pain medications including but not limited to non-opioid analgesics (acetaminophen, NSAIDs -selective and non selective), weak opioids, strong opioids and the use of adjuvants with opioid therapy and how to switch up and down the analgesia ladder.	Expects the surgeon to be able to design an appropriate initial pain treatment plan and adequately manage residual pain	Is aware of the high relevance of systemic pain therapy in the acute and chronic treatment of elbow pathologies.	Medication Line Pain Treatment Alleviation
<b>Injections</b>	Teaches the surgeon the principles behind injections. This should include understanding the pharmaceutical knowledge of the injected products including the indications, contraindications and management of possible adverse reactions and complications. They should be knowledgeable 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 elbow, 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 elbow pathologies.	Medication Puncture Pain Treatment Alleviation
<b>Pain catheters</b>	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.	Is able to convey the common concepts of Pain Catheters in the treatment of elbow pathologies.	Is aware of the high relevance of pain catheters in the acute and chronic treatment of elbow pathologies.	Medication Catheter Pain Treatment Alleviation
<b>E. 1.4.4 Conservative fracture treatment</b>				
<b>Immobilization</b>	Teaches the surgeon the principles behind immobilization techniques. The surgeon is taught on the technique to apply plaster of paris correctly and alternative materials. The surgeon needs to understand the possible complications and how to avoid and detect them.	Expects the surgeon to be able to perform a correct placement of elbow casting 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 elbow pathologies.	Pain Healing Stabilization Rest

<b>Physiotherapy</b>	Teaches the surgeon the principles of physiotherapy for the treatment of elbow fractures. The surgeon is taught the basics on the different treatment modalities of the immobilized and adjacent joints during fracture treatment	Is able to convey the common concepts of Physiotherapy in the treatment of elbow pathologies.	Is aware of the immense positive impact that physiotherapy can have in the treatment of elbow pathologies.	Conservative Treatment Motion Intervention
<b>E 1.5 Elbow operative</b>				
	<b>Knowledge</b>	<b>Skill</b>	<b>Attitude</b>	<b>Keywords</b>
<b>E 1.5.1 Arthroscopy</b>				
<b>Diagnostic arthroscopy</b>	Teaches the surgeon the possibilities and limitations of arthroscopy in the diagnosis of elbow pathologies. The surgeon is taught on how to respect the critical role of sterility and hygiene when applying arthroscopy to the elbow joint. The surgeon is taught the correlation between the different portals and the nerves around the elbow.	Expects the surgeon to be able to perform arthroscopic approaches to the elbow joint	Is aware of the significant role of elbow arthroscopy in the treatment of acute and chronic elbow pathologies. Is aware of the high relevance that the procedure can have for patients outcomes.	Overview Diagnosis Intervention Planning
<b>Ligament repair</b>	Teaches the surgeon the possibilities and limitations of arthroscopy in the treatment of ligament lesion around elbow (PLRI).	Expects the surgeon to be able to perform arthroscopic surgical approaches to the elbow joint, its ligamentous stabilizers and - if indicated - perform refixation of these structures in the acute setting, or plication in the chronic setting.	Is aware of the importance of stable joint functionality and therefore appreciates the necessity to be able to perform acute and late stabilization procedures.	Fixation Stabilization Ligament Anchor Repair
<b>Tendon repair</b>	Teaches the surgeon the possibilities and limitations of endoscopy in the treatment of tendon repair	Expects the surgeon to be able to perform endoscopic approaches to the elbow joint and the muscle origins to - if indicated - perform refixation of these structures in the acute setting.	Is aware of the importance of stable joint functionality and therefore appreciates the necessity to be able to perform acute and late tendon repair procedures.	Fixation Strength Tendon Anchor Repair
<b>Removal of loose bodies</b>	Teaches the surgeon the possibilities and limitations of arthroscopy in the removal of loose bodies. The surgeon is taught on how to respect the critical role of sterility and hygiene when applying arthroscopy to the elbow joint.	Expects the surgeon to be able to perform surgical minimally-invasive, arthroscopic and open approaches to the elbow joint to - if indicated - removal loose bodies.	Is aware of possible effects of loose bodies on joint function and quality of life.	Locking Pain Effusion Removal Treatment
<b>Cartilage treatment</b>	Teaches the surgeon the possibilities and limitations of arthroscopy in the cartilage treatment.	Expects the surgeon to be able to perform open and arthroscopic approaches to the elbow joint to - if indicated - remove loose bodies.	Is aware of the high relevance of osteoarthritis for patients quality of life and its high impact on socioeconomic costs.	Arthritis Pain crepitus Lesion Stiffness
<b>Removal of osteophytes</b>	Teaches the surgeon the possibilities and limitations of arthroscopy of most common locations of and the removal of osteophytes. Teaches the surgeon how to differentiate between osteophytes and normal bone	Expects the surgeon to be able to perform open and arthroscopic approaches to the elbow joint to - if indicated - remove osteophytes.	Is aware of the high relevance of osteophytes for patients quality of life and its high impact on socioeconomic costs.	Motion Mobility Arthroscopic open

<b>Arthrolysis</b>	Teaches the surgeon the possibilities and limitations of arthrolysis (anterior, posterior, posterolateral) of the elbow. Teaches how to use extra retraction portals that can help to provide a better view. The surgeon is taught the correlation between the different portals and the nerves around the elbow. teaches the difference between capsulectomy and capsulotomy	Expects the surgeon to be able to perform open and arthroscopic approaches to the elbow joint to - if indicated - perform elbow arthrolysis.	Is aware of the high relevance of stiffness for patients quality of live and its high impact on socioeconomic costs.	Stiffness Function Quality of Live Arthroscopic open
<b>Synovectomy</b>	Teaches the surgeon the possibilities and limitations of synovectomy (anterior, posterior, posterolateral) of the elbow. The surgeon is taught the correlation between the different portals and the nerves around the elbow.	Expects the surgeon to be able to perform open and arthroscopic approaches to the elbow joint to - if indicated - perform synovectomy.	Is aware of the high relevance of synovitis for patients quality of live.	Pain Inflammation Joint Capsule
<b>fracture treatment</b>	Teaches the surgeon the possibilities and limitations of arthroscopic fracture treatmentof the elbow. The surgeon is taught the removal of bony fragments, the arthroscopic reduction and fixation techniques of elbow (radial head fixation, coronoid frature, capitellum fracture, ...)	Expects the surgeon to be able to perform open and arthroscopic approaches to the elbow joint to - if indicated - perform fracture repair.	Is aware of the high relevance of fractures for patients quality of live and its high impact on socioeconomic costs.	Stability Pain Function Reposition Plate Screw
<b>E 1.5.2 Reconstructive procedures</b>				
<b>Open fracture treatment</b>	Teaches the surgeon 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 elbow 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.	Approach Surgery Repositioning Fixation
<b>Open ligament repair</b>	Teaches the surgeon the possibilities and limitations of ligament repair. Teaches the different techniques that can be used to for ligament repair: transosseus fixation , anchor treatment. Knowledge of the location of the proximal and distal attachment of the ligaments around the elbow	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow 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.	Fixation Stabilization Ligament Anchor Repair
<b>Open tendon repair</b>	Teaches the surgeon the possibilities and limitations of tendon repair (biceps, triceps) Teaches the different techniques and approaches (single or double incision) that can be used to for tendon repair. Transosseus, endobutton, anchors, screw fixation,	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow 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.	Fixation Strength Tendon Anchor Repair
<b>Open stabilization procedures</b>	Teaches the surgeon the possibilities and limitations of open stabilization procedures. Teaches the different techniques and approaches (medial -lateral)	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for adequate open stabilization procedures.	Is aware of the high relevance of adequate open joint stabilization procedures for patients quality of live and its high impact on socioeconomic costs.	Fixation Stabilization Ligament Anchor Repair
<b>Open arthrolysis</b>	Teaches the surgeon the possibilities and limitations of open arthrolysis procedures. Teaches the different techniques and approaches (medial -lateral, anterior - posterior).	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow 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.	Stiffness Function Quality of Live open
<b>E 1.5.3 Osteotomies</b>				

<b>Corretive Osteotomie humerus</b>	Teaches the surgeon the possibilities and limitations of correctie osteotomy 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 elbow joint, that are necessary for adequate corrective humerus osteotomies.	Is aware of the potentially high relevance of adequate corrective osteotomy of the humerus for patients quality of live.	Deviation Saw bone Osteotomy
<b>Corrective osteotomie ulna</b>	Teaches the surgeon the possibilities and limitations of correctie osteotomy ulna. 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 elbow joint, that are necessary for adequate corrective ulna osteotomies.	Is aware of the potentially high relevance of adequate corrective osteotomy of the ulna for patients quality of live.	Deviation Saw Ulna Planning Osteotomy
<b>Corrective osteotomie radius</b>	Teaches the surgeon the possibilities and limitations of correctie osteotomy radius. 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 elbow joint, that are necessary for adequate corrective radius osteotomies.	Is aware of the potentially high relevance of adequate corrective osteotomy of the radius for patients quality of live.	Deviation Saw Radius Correction Planning Osteotomy
<b>E 1.5.4 Osteosyntheses</b>				
<b>Distal humerus fractures</b>	Teaches the surgeon the possibilities and limitations of osteosynthesis of the distal humerus fracture. The surgeon is taught the different techniques (plate and screw fixation --> 90-90, perpendicular, one plate, external fixator) 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 (triceps-sparing, tricepsplit, olecranonosteotomy, ...)	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for adequate distal humerus fracture repair.	Is aware of the high relevance of adequate distal humerus fracture repair for patients quality of live and its high impact on socioeconomic costs.	Humerus fracture Fixation ORIF Plate Screw Ulnar nerve
<b>Ulnar fractures</b>	Teaches the surgeon the possibilities and limitations of osteosynthesis of the proximal ulna fracture. The surgeon is taught the different techniques (plate and screw fixation, screw fixation, tension band wiring, suture fixation) and its different indications. The surgeon is taught the approach for olecranon, proximal ulna and/or coronoid fractures.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for adequate ulnar fracture repair.	Is aware of the high relevance of adequate ulna fracture repair for patients quality of live and its high impact on socioeconomic costs.	Ulna fracture Fixation ORIF Plate Screw Ulnar nerve
<b>Radius fractures</b>	Teaches the surgeon the possibilities and limitations of osteosynthesis of the radial head fractures. The surgeon is taught the different techniques (plate and screw fixation, screw fixation (tripod technique) suture fixation) and its different indications.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for adequate radius fracture repair.	Is aware of the high relevance of adequate radius fracture repair for patients quality of live and its high impact on socioeconomic costs.	Radius fracture Fixation ORIF Plate Screw Radial nerve

<b>Dislocation fractures</b>	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 elbow with different osteosynthesis techniques. Learn how to apply correctly an external fixator in case of remaining instability.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for adequate dislocation fracture repair.	Is aware of the high relevance of adequate dislocation fracture repair for patients quality of life and its high impact on socioeconomic costs.	Bones fracture Fixation ORIF Plate Screw nerve
<b>E 1.5.5 Resections</b>				
<b>Joint resection</b>	Teaches the surgeon the possibilities and limitations of joint resection. Teach the surgeon the different indications (degenerative, traumatic; septic ).	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for a joint resection procedures.	Is aware of the potentially high relevance of joint resection for patients quality of live.	Salvage Degeneration Bone loss Pain
<b>Radial head resection</b>	Teaches the surgeon the possibilities and limitations of radial head resection. Teach the surgeon the different indications (degenerative, traumatic) Teach the surgeon to evaluate longitudinal of varus/valgus instability after resection and teach to handle this cases.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for radial head resection.	Is aware of the potentially high relevance of radial head resection for patients quality of live.	Salvage Degeneration Bone loss Pain
<b>E 1.5.6 Endoprosthetics</b>				
<b>Total elbow arthroplasty</b>	Teaches the surgeon the possibilities and limitations of total elbow arthroplasty. The surgeon is taught on the different types of total elbow arthroplasty (linked, unlinked or linkable) and its indications. The surgeon is taught on the five different types of approaches used during TEA (each comes with its own unique advantages and disadvantages).	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for correct implantation of TEA. Also expects the surgeon to be able to achieve safe implant fixation and stable implant mechanics.	Is aware of the high relevance of adequate TEA for patients quality of live and its high impact on socioeconomic costs.	Replacement Defect Bone Pain Complication Loosening Planning
<b>Hemiarthroplasty</b>	Teaches the surgeon the possibilities and limitations of hemiarthroplasty. The surgeon is taught on the type(s) of hemi elbow arthroplasty and its indications. The surgeon is taught on the different types of approaches used during hemiarthroplasty.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for correct implantation of elbow Hemiarthroplasty. Also expects the surgeon to be able to achieve safe implant fixation and stable implant mechanics.	Is aware of the high relevance of adequate Hemiarthroplasty for patients quality of live and its high impact on socioeconomic costs.	Replacement Defect Humerus Fracture Pain Complication Loosening Planning
<b>Radial head replacement</b>	Teaches the surgeon the possibilities and limitations of radial head arthroplasty. The surgeon is taught on the different types of radial head arthroplasty (anatomic vs nonanatomic, loose fitted vs press fitted stem, bipolar, pyrocarbon) and its indications. The surgeon is taught on the different types of approaches used during radial head arthroplasty and the advantages and disadvantages relative to the indication of the surgery	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for correct implantation of radial head arthroplasty. Also expects the surgeon to be able to achieve safe implant fixation and stable implant mechanics.	Is aware of the high relevance of adequate radial head arthroplasty for patients quality of live and its high impact on socioeconomic costs.	Replacement Defect Radius Fracture Pain Complication Loosening Planning

<b>Interposition arthropöasty</b>	Teaches the surgeon the possibilities and limitations of interposition arthroplasty. The surgeon is taught on different grafts that can be used, how to fix it and the use of external fixator in this indication.	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for interposition arthroplasty.	Is aware of the potentially high relevance of interposition arthroplasty for patients quality of live.	Salvage Degeneration Bone loss Pain
<b>E 1.5.7 Soft Tissues (Tendons/Nerves/Vessels..)</b>				
<b>Direct ligament repair</b>	Teaches the surgeon the possibilities and limitations of direct ligament repair. The surgeon is taught when there is an indication for direct ligament repair or when conservative treatment should be proposed. The surgeon is taught on the anatomical landmarks of the attachment of the MCL and LCL. The surgeon is taught rehabilitation program after direct ligament repair	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for stable lligament repair and to be capable of variuos techniques for ligament fixation.	Is aware of the high relevance of ligament repair for patients quality of live and ist potentially high impact on socioeconomic costs.	Fixation Stabilization Ligament Anchor Repair
<b>Ligment reconstruction</b>	Teaches the surgeon the possibilities and limitations of ligament reconstruction. The surgeon is taught when there is an indication for ligament reconstruction and which grafts (allograft-autograft can be used). The surgeon is taught on the anatomical landmarks of the attachment of the MCL and LCL. The surgeon is taught rehabilitation program after ligament reconstruction	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for stable lligament reconstruction and to be capable of variuos techniques for ligament reconstruction.	Is aware of the high relevance of ligament reconstruction for patients quality of live and ist potentially high impact on socioeconomic costs.	reconstructions surgery Stabilization Ligament Anchor Repair
<b>Internal bracing</b>	Teaches the surgeon the possibilities and limitations of internal bracing. The surgeon is taught when there is an indication for internal bracing andf which internal braces are currently on the market The surgeon is taught on the anatomical landmarks of the attachment of the MCL and LCL. The surgeon is taught rehabilitation program after interal bracing	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for internal bracing and to be capable of surgical techniques in the field of internal bracing.	Is aware of the high relevance of internal bracing for patients quality of live.	reconstructions surgery Stabilization Ligament Anchor Repair
<b>Direct tendon repair</b>	Teaches the surgeon the possibilities and limitations of tendon repair. The surgeon is taught when there is an indication for operative treatment and when conservative treatment can be advised. The surgeon is taught on the anatomical landmarks of the attachment of the biceps and triceps and the several approaches and techniques . The surgeon is taught rehabilitation program after direct tendon repair	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for stable tendon repair and to be capable of variuos techniques for tendon fixation.	Is aware of the high relevance of tendon repair for patients quality of live and ist potentially high impact on socioeconomic costs.	Fixation Strength Tendon Anchor Repair
<b>Tendon transfer</b>	Teaches the surgeon the possibilities and limitations of tendon repair. The surgeon is taught when there is an indication for operative treatment with a tendon transfer and with allograft and autograft can be used. The surgeon is taught on the anatomical landmarks of the attachment of the biceps and triceps and the several approaches and techniques . The surgeon is taught rehabilitation program after tendon transfer	Expects the surgeon to be able to perform the commonly available open surgical approaches to the elbow joint, that are necessary for tendon transfer surgery and to be capable of variuos techniques for tendon fixation.	Is aware of the high relevance of tendon transfer for patients quality of live and ist potentially high impact on socioeconomic costs.	Insufficiency Tendon Strength Healing Biologiy Graft
<b>E 1.5.8 Amputations</b>				

<b>Forearm amputatuion</b>	Teaches the surgeon the possibilities Forearm amputations. The surgeon is taught in the rare indications for this invasive and definitive procedure. Also, the surgeon 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 surgeon has to know about prosthetic options (traditional and modern as well as experimental) to offer the patient options for the future.	Expects the surgeon to know the key anatomical structures and to be able to dissect them in a safe manner. Also expects the surgeon 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 forearm amputations.	Forearm Amputation Neurovascular anatomy Salvage Pain infection
<b>Elbow exarticulation</b>	Teaches the surgeon the possibilities Forearm amputations. The surgeon is taught in the rare indications for this invasive and definitive procedure. Also, the surgeon 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 surgeon has to know about prosthetic options (traditional and modern as well as experimental) to offer the patient options for the future.	Expects the surgeon to know the key anatomical structures and to be able to dissect them in a safe manner. Also expects the surgeon 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 elbow exarticulation.	Elbow Exarticulation Neurovascular anatomy Salvage Pain infection
<b>Distal humerus amputation</b>	Teaches the surgeon the possibilities Forearm amputations. The surgeon is taught in the rare indications for this invasive and definitive procedure. Also, the surgeon 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 surgeon has to know about prosthetic options (traditional and modern as well as experimental) to offer the patient options for the future.	Expects the surgeon to know the key anatomical structures and to be able to dissect them in a safe manner. Also expects the surgeon 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 distal humerus amputations.	Distal Humerus Amputation Neurovascular anatomy Salvage Pain infection
<b>E 1.5.9 Arthrodesis</b>				
<b>Elbow arthrodesis</b>	Teaches the surgeon the possibilities and limitations of elbow arthrodesis. The surgeon is taught on the advantages and disadvantages of the several positions of fixation. The surgeon is taught the use of internal and external fixation	Expects the surgeon to know the key anatomical structures around the elbow and to be able to dissect them in a safe manner. Also expects the surgeon to be able to perform stable osteosynthetic techniques, to gain stable fusion of the joint.	Is aware of the significant implications of elbow arthrodesis on the quality of life of the patient, and is aware of the rarity of the indications for elbow arthrodesis.	Arthrodesis Elbow Function Impairment Indication