الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

## Mapping of Orthopedic Surgery Curricular Competencies with Assessment Tools

This outline maps curricular competencies\objectives with the assessment tools and potential test type. Tests will emphasize certain parts of the outline, and no single test will include questions on all aspects. Questions may include content that is not included in this outline.

| Construct | Domain | Rotation | Year | Code | Performance indicator (Curriculum) | Page # | Learning Domain (1:Cognitive, 2:Skills, 3:Attitude) | Assessment Method | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | MCQ - Part I Written | MCQ - Final Written | OSCE - Final Clinical | SOE - Final Clinical |
| **A. Medical Expert** | Basic Science | Arthroplasty | Junior | A1.1 | Understand the general principles and surgical technique for the cemented/cementless femoral and acetabular components. | 33 | 1 | * | * | | * |
| | | | | A1.2 | Understand the classification of acetabular and femoral deficiencies. | 33 | 1 | * | * | | * |
| | | | | A1.3 | Understand the classification of tibial and femoral deficiencies about the total knee arthroplasty (TKA). | 33 | 1 | * | * | | * |
| | | | | A1.4 | Understand basic biomaterials issues in total joint arthroplasty. Discuss the following materials and their use in orthopaedic implants: ceramics, polyethylene, metals, and methyl methacrylate. | 33 | 1 | * | * | | * |
| | | | Senior | A1.5 | Understand the immediate and long-term interactions between host bone and implants, bone remodeling, and its implications about the THA (e.g. calcar resorption, cementless stem ingrowth) and TKA. | 34 | 1 | | * | | * |
| | | | | A1.6 | Understand the biological responses to wear debris and differentiate them from bone response to implants (osteolysis versus resorption). | 34 | 1 | | * | | * |
| | | | | A1.7 | Understand the tribiology (wear issues) associated with total joint arthroplasty. | 34 | 1 | | * | | * |
| | | | | A1.8 | Understand the design rationale for THA and TKA implants as it pertains to common complications (PF groove, elevated lip liners, anatomic versus straight stems, etc.). | 34 | 1 | | * | | * |
| | | | | A1.9 | Understand the biomechanics of a TKA and osteotomy about the knee. | 34 | 1 | | * | | * |
| | | | | A1.10 | Describe the pathogenesis of implant loosening (lysis, membrane formation, enzyme elevation) at the cement-bone and metal-cement interfaces. | 34 | 1 | | * | | * |
| | | | | A1.11 | Discuss the principles and biomechanics of osteotomies about the hip/knee. | 34 | 1 | | * | | * |
| | | | | A1.12 | Know the principles and application of using autografts and allografts for the defects associated with THA/TKA. | 35 | 1 | | * | | * |
| | | Foot and ankle surgery | Junior | A1.13 | Understand the gross anatomy and histology of the normal foot. | 35 | 1 | * | * | | * |
| | | | | A1.14 | Understand the kinematics, kinetics, and wear characteristics of adult foot and ankle biomechanics. | 35 | 1 | * | * | | * |
| | | | | A1.15 | Understand neuromuscular and neurologic diseases as they apply to the foot and ankle (i.e., CP, CVA, Charcot-Marie-Tooth disease, diabetes mellitus, myelodysplasia, etc.). | 36 | 1 | * | * | | * |
| | | | | A1.16 | Understand circulatory disturbances such as arterial aneurysm, distal arterial occlusive disease, lymphedema, and thrombosis. | 36 | 1 | * | * | | * |
| | | | | A1.17 | Understand the principles and complications of rheumatoid foot and ankle. | 36 | 1 | * | * | | * |
| | | | | A1.18 | Understand gout and periarticular alterations such as calcific deposits, subtalar arthrodesis, metatarsal head resection, and ankle joint arthrodesis. | 36 | 1 | * | * | | * |
| | | | | A1.19 | Understand hindfoot pathology such as calcaneal spurs, fasciitis, bursitis, Achilles tendonitis, and varus and valgus deformity of the heel. | 36 | 1 | * | * | | * |
| | | | Senior | A1.20 | Understand the etiology of cavus foot. | 36 | 1 | | * | | * |
| | | | | A1.21 | Understand osteoarthritis around the ankle and foot. | 36 | 1 | | * | | * |
| | | | | A1.22 | Understand common tumors of the foot and ankle such as giant cell tumor, fibroma, ganglion cyst, lipoma, etc. | 36 | 1 | | * | | * |
| | | Oncology | Junior | A1.23 | Understand the natural history and cellular biology of primary bone and soft-tissue neoplasms, both benign and malignant. | 37 | 1 | * | * | | * |
| | | | | A1.24 | Understand the natural history and cellular biology of primary bone and soft-tissue neoplasms, both benign and malignant. | 37 | 1 | * | * | | * |
| | | | | A1.25 | Know the spectrum of benign and malignant neoplastic disease entities and tumor-like conditions encountered in musculoskeletal oncology | 37 | 1 | * | * | | * |
| | | Pediatric orthopaedics | Junior | A1.26 | Understand normal and abnormal growth and development, including embryology, osseous growth, muscular growth, growth rate, developmental milestones, and timing, especially secondary sexual characteristics. | 38 | 1 | * | * | | * |
| | | | | A1.27 | Introduction of skeletal dysplasias including defects of tubular bone (achondroplasia, multiple epiphyseal dysplasia, spondyloepiphyseal dysplasia), disorganized cartilage and/or fibrous components (Ollier's disease), and local or regional bone malformations. | 38 | 1 | * | * | | * |
| | | | | A1.28 | Understand the characteristics and pathogenesis of constitutional diseases with bone pathology (rickets, mucopolysaccah, calcium/phosphorous disorders), metabolic (rickets, osteomal, renal osteodystrophy, hypophosphatemia, parathyroid or thyroid disorders, heavy metal, juvenile osteoporosis, hypervitaminosis, scurvy, infectious hyperostosis), connective tissues (Ehlers-Danlos, Marfan, Down syndrome), and short stature. | 38 | 1 | * | * | | * |
| | | | | A1.29 | Understand the etiology, embryology and classification of genetic disorders, including autosomal dominant, autosomal recessive, sex-linked dominant, sexlinked recessive, chromosomal, and multifactorial disorders. Recognize the diseases that can be identified through amniocentesis. | 38 | 1 | * | * | | * |
| | | | | A1.30 | Understand the characteristics and pathogenesis of muscular dystrophies (such as Duchenne, Becker, limb Girdle, hypotonic, myotonic), inflammatory myopathies (polio, spinal muscular atrophies, hereditary motor sensory neuropathies), myelodysplasia, spondyloarthropathies, cervical spine (congenital malformations, hypermobility), and spinal deformities (scoliosis, kyphosis, spondylosis, and spondylolisthesis). | 39 | 1 | * | * | | * |
| | | | | A1.31 | Understand underlying processes with upper limb (deficiencies and malformations), hip (such as developmental dysplasia of the hip, Perthes disease, idiopathic chondrolysis), leg length discrepancies, lower limb (congenital deficiencies, congenital pseudarthrosis, posteromedial bowing, patellofemoral syndrome, Osgood-Schlatter disease, congenital dislocation or subluxation, clubfoot, congenital vertical talus, postural deformations, polydactyly). | 39 | 1 | * | * | | * |
| | | | | A1.32 | Understand the characteristics, pathogenesis of constitutional diseases with bone pathology (rickets, mucopolysaccah, calcium/phosphorous disorders), metabolic (rickets, osteomal, renal osteodystrophy, hypophosphatemia, parathyroid or thyroid disorders, heavy metal, juvenile osteoporosis, hypervitaminosis, scurvy, infectious hyperostosis), connective tissues (Ehlers-Danlos, Marfan, Down syndrome), and short stature. | 38 | 1 | * | * | | * |
| | | | | A1.33 | Understand the characteristics, history and pathogenesis of trauma. | 39 | 1 | * | * | | * |
| | | | Senior | A1.34 | Understand the characteristics and pathogenesis of complex neuromuscular disorders. | 39 | 1 | | * | | * |
| | | | | A1.35 | Understand complex upper limb, leg length, hip, and lower limb deformities and disorders. | 39 | 1 | | * | | * |
| | | | | A1.36 | Understand the characteristics, history and pathogenesis of complex trauma. | 39 | 1 | | * | | * |
| | | Spine surgery | Junior | A1.37 | Outline the natural history of the specific condition with and without surgical treatment | 40 | 1 | * | * | | * |
| | | Sports medicine | Junior | A1.38 | Describe the pathophysiology of the following pathologic entities related to the shoulder: rotator cuff tendinitis/tear/impingement, glenohumeral instability, adhesive capsulitis | 41 | 1 | * | * | | * |
| | | | | A1.39 | Understand and describe the pertinent clinical anatomy of the shoulder, elbow, knee, leg, ankle, and foot | 41 | 1 | * | * | | * |
| | | | | A1.40 | Understand and describe the clinical anatomy and biomechanics of the shoulder | 41 | 1 | * | * | | * |
| | | | | A1.41 | Understand and describe the mechanics of the throwing motion | 41 | 1 | * | * | | * |
| | | | | A1.42 | Understand and describe the relationship between shoulder instability and rotator cuff tendinitis | 41 | 1 | * | * | | * |
| | | | | A1.43 | Understand and describe the relationship between impingement and rotator cuff tears. | 41 | 1 | * | * | | * |
| | | | | A1.44 | Understand the pathology of meniscal cysts and discoid menisci | 42 | 1 | * | * | | * |
| | | | | A1.45 | Understand and describe the pathophysiology of compartment syndrome | 42 | 1 | * | * | | * |
| | | | | A1.46 | Understand and describe the pathophysiology of stress fracture | 42 | 1 | * | * | | * |
| | | | | A1.47 | Understand the healing potential of meniscal tears and chondral defects. | 42 | 1 | * | * | | * |
| | | | | A1.48 | Understand the pathophysiology and presentation of OCD of the talus | 42 | 1 | * | * | | * |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A1.49 | Understand the pertinent clinical anatomy and biomechanics of the ankle. | 42 | 1 | * | * | | * |
| | | | | A1.50 | Understand the pathophysiology of the following related to the ankle: the different types of Achilles tendinitis, the different types of ankle sprains, and ankle instability. | 42 | 1 | * | * | | * |
| | | | | A1.51 | Understand the pertinent clinical anatomy and biomechanics of the elbow. | 42 | 1 | * | * | | * |
| | | | | A1.52 | Understand the pathology of Panner's disease (OCD of capitellum) and valgus extension overload | 42 | 1 | * | * | | * |
| | | | Senior | A1.53 | Detailed knowledge of the anatomical structures of the shoulder, elbow, knee and ankle as it relates to sports injuries and surgical approaches and reconstructions | 43 | 1 | | * | | * |
| | | | | A1.54 | Understand anatomy, physiology, and biomechanics as they relate to patients with sportsrelated injuries and disease | 43 | 1 | | * | | * |
| | | | | A1.55 | | | | | | | |
| | | Upper extremity | Junior | A1.56 | Demonstrate detailed knowledge of the anatomical structures of the shoulder and know all surgical approaches to the shoulder | 45 | 1 | * | * | | * |
| | | | | A1.57 | Understand the anatomy, physiology, and biomechanics of the shoulder as they relate to patients with injuries and disease | 45 | 1 | * | * | | * |
| | | | | A1.58 | Understand the anatomy/pathoanatomy of why and how to appropriately reduce a displaced proximal humerus fracture | 46 | 1 | * | * | | * |
| | | | Senior | A1.59 | Understand the influence of bone loss in instability cases and how it affects surgical decision making. | 46 | 1 | | * | | * |
| | | Trauma | Junior | A1.60 | Understand the pathoanatomy of long bone fractures including recognition of associated injuries, classification of fractures, and temporary stabilization. | 47 | 1 | * | * | | * |
| | | | Senior | A1.61 | Know the pathoanatomy of most skeletal injuries, i.e. fractures and dislocations of the shoulder, arm, elbow, forearm, wrist, pelvis, acetabulum, femur, knee, ankle, and foot. | 48 | 1 | | * | | * |
| | | | | A1.62 | Know the classification of most skeletal injuries i.e. fractures and dislocations of the shoulder, arm, elbow, forearm, wrist, pelvis, acetabulum, femur, knee, ankle, and foot. | 48 | 1 | | * | | * |
| | A2. Assessment & Diagnosis | Arthroplasty | Junior | A2.1 | Differentiate the bursal and soft-tissue diseases about the hip/knee during office sessions, clinic, and rounds. | 32 | 1 | * | * | | * |
| | | | | A2.2 | Based on a careful history and physical exam, propose a rational approach to the evaluation of patients with pain at various intervals after a total hip replacement. | 32 | 1 | * | * | | * |
| | | | | A2.3 | Demonstrate the ability to elicit the presence and location of physical symptoms with cognitively impaired patients. | 32 | 1,2 | * | * | * | * |
| | | | | A2.4 | Distinguish other diseases predisposing to arthritis (Paget's disease, avascular necrosis, Charcot arthropathy, ochronosis). | 33 | 1 | * | * | | * |
| | | | | A2.5 | Obtain an accurate history and perform a thorough physical examination on patients with an inflamed hip and knee to generate a differential diagnosis of this condition with the pertinent positive and negative findings of these disorders: rheumatoid arthritis, septic arthritis, acute/chronic osteomyelitis, primary/post-traumatic osteoarthritis, gout, pseudo-gout, systemic lupus erythematosus, Reiter's disease, ankylosing spondylitis, PVNS, hemophilia, and osteonecrosis. The resident must be able to formulate a plan for the work-up of these patients including laboratory and radiographic evaluation. | 33 | 2 | | | * | |
| | | | | A2.6 | Understand the perioperative considerations for THA and TKA including preoperative medical evaluation, blood conservation, deep vein thrombosis prophylaxis, and rehabilitation. | 33 | 1 | * | * | | * |
| | | | Senior | A2.7 | Based on the information, be able to formulate a differential diagnosis for these disorders: osteoarthritis (primary and secondary), rheumatoid arthritis, seronegative arthritis, septic arthritis, osteomyelitis, PVNS, hemophilic arthropathy, osteonecrosis, and Charcot arthropathy. | 33 | 1 | | * | | * |
| | | | | A2.8 | Organize a systematic evaluation of disorders including radiography, laboratory tests, and appropriate ancillary studies. | 33 | 1 | | * | | * |
| | | | | A2.9 | Evaluate patients with anterior knee pain. | 33 | 1 | | * | | * |
| | | | | A2.10 | Evaluate patients with painful THAs | 33 | 1 | | * | | * |
| | | | | A2.11 | Distinguish nonsuppurative joint infections (fungal, tuberculosis, viral) and recognize less common forms of secondary osteoarthritis (post-septic, Paget's disease, hemochromatosis). | 33 | 1 | | * | | * |
| | | | | A2.12 | Recognize the early & late complications after THA/TKA | 33 | 1 | | * | | * |
| | | | | A2.13 | Thoroughly comprehend arthroplasty complications of these problems. | 34 | 1 | | * | | * |
| | | | | A2.14 | Evaluate patients with painful total joint arthroplasty and make appropriate judgments based on history, physical examination, and ancillary studies. | 34 | | | * | | * |
| | | Foot and ankle surgery | Junior | A2.15 | Understand the examination, diagnosis, and evaluation of hallux valgus, hallux rigidus, hallux varus, and metatarsus primus varus. | 35 | 1 | * | * | | * |
| | | | | A2.16 | Understand and identify the different types of foot and ankle fractures and dislocations. | 35 | 1 | * | * | | * |
| | | | | A2.17 | Understand and identify stress fractures of the fibula, metatarsals, navicular, and tibia. | 35 | 1 | * | * | | * |
| | | | | A2.18 | Understand infectious and noninfectious inflammatory disorders of the foot and ankle such as bursitis and plantar fasciitis. | 36 | 1 | * | * | | * |
| | | | | A2.19 | Understand localized entrapment neuropathies such as anterior tarsal tunnel, digital nerve compression, Morton's neuroma, and sural nerve compression. | 36 | 1 | * | * | | * |
| | | | | A2.20 | Understand the dermatologic and nail disorders of the nail and adjacent soft tissue. | 36 | 1 | * | * | | * |
| | | | | A2.21 | Understand and identify the different types of forefoot and toe deformities. | 36 | 1 | * | * | | * |
| | | | | A2.22 | Understand the classification, roentgenographic evaluation,  of flatfoot or pes planus | 36 | 1 | * | * | | * |
| | | | | A2.23 | Understand neuromuscular and neurologic diseases as they apply to the foot and ankle (i.e., CP, CVA, Charcot-Marie-Tooth disease, diabetes mellitus, myelodysplasia, etc.). | 36 | 1 | * | * | | * |
| | | | | A2.24 | Understand circulatory disturbances such as arterial aneurysm, distal arterial occlusive disease, lymphedema, and thrombosis. | 36 | 1 | * | * | | * |
| | | | | A2.25 | Understand the principles and complications of rheumatoid foot and ankle. | 36 | 1 | * | * | | * |
| | | | | A2.26 | Understand gout and periarticular alterations such as calcific deposits, subtalar arthrodesis, metatarsal head resection, and ankle joint arthrodesis. | 36 | 1 | * | * | | * |
| | | | | A2.27 | Interpret plain radiographs of the foot and ankle | 36 | 1 | * | * | | * |
| | | | | A2.28 | Interpret CT scans, SPECT CT, MRI, etc. | 36 | 1 | * | * | | * |
| | | | Senior | A2.29 | Understand osteoarthritis around the ankle and foot. | 36 | 1 | | * | | * |
| | | | | A2.30 | Understand common tumors of the foot and ankle such as giant cell tumor, fibroma, ganglion cyst, lipoma, etc. | 36 | 1 | | * | | * |
| | | Oncology | Junior | A2.31 | Understand the approach of surgical specimens and their interpretation through light microscopy, immunohistochemistry, and cytogenetics. | 37 | 1 | * | * | | * |
| | | | | A2.32 | Understand the diagnostic imaging modalities utilized in evaluation, biopsy techniques involved in diagnosis of primary bone and soft-tissue neoplasms, both benign and malignant. | 37 | 1 | * | * | | * |
| | | | | A2.33 | Know the spectrum of benign and malignant neoplastic disease entities and tumor-like conditions encountered in musculoskeletal oncology | 37 | 1 | * | * | | * |
| | | | | A2.34 | Know the important aspects of clinical diagnosis used in the evaluation of soft-tissue and bone neoplasms | 37 | 1 | * | * | | * |
| | | | | A2.35 | Design and implement the appropriate diagnostic approach to bone and soft-tissue lesions from the initial outpatient-based clinical evaluation of the patient through a utilization of the entire spectrum of diagnostic modalities. | 37 | 1 | * | * | | * |
| | | | | A2.36 | Synthesize clinical, radiographic, and pathologic diagnostic information into an appropriate differential diagnosis and a final definitive diagnosis for musculoskeletal lesions. | 37 | 1 | * | * | | * |
| | | | Senior | A2.37 | Design and implement the appropriate diagnostic approach to bone and soft-tissue lesions from the initial outpatient-based clinical evaluation of the patient through utilization of the entire spectrum of diagnostic modalities. | 38 | 1 | | * | | * |
| | | | | A2.38 | Synthesize clinical, radiographic, and pathologic diagnostic information into an appropriate differential diagnosis and a final definitive diagnosis for musculoskeletal lesions. | 38 | 1 | | * | | * |
| | | Pediatric orthopaedics | Junior | A2.39 | Understand the special elements of the initial and follow-up examination of the pediatric orthopaedic patient in the outpatient clinic setting, including working with families, the nonverbal child, the child with developmental disabilities, and adolescents. | 38 | 1 | * | * | | * |
| | | | | A2.40 | Introduction of skeletal dysplasias including defects of tubular bone (achondroplasia, multiple epiphyseal dysplasia, spondyloepiphyseal dysplasia), disorganized cartilage and/or fibrous components (Ollier's disease), and local or regional bone malformations. | 38 | 1 | * | * | | * |
| | | | | A2.41 | Understand the diagnostic features of constitutional diseases with bone pathology (rickets, mucopolysaccah, calcium/phosphorous disorders), metabolic (rickets, osteomal, renal osteodystrophy, hypophosphatemia, parathyroid or thyroid disorders, heavy metal, juvenile osteoporosis, hypervitaminosis, scurvy, infectious hyperostosis), connective tissues (Ehlers-Danlos, Marfan, Down syndrome), and short stature. | 38 | 1 | * | * | | * |
| | | | | A2.42 | Understand the diagnosis, and treatment of genetic disorders, including autosomal dominant, autosomal recessive, sex-linked dominant, sexlinked recessive, chromosomal, and multifactorial disorders. Recognize the diseases that can be identified through amniocentesis. | 38 | 1 | * | * | | * |
| | | | | A2.43 | Understand the diagnostic features of muscular dystrophies (such as Duchenne, Becker, limb Girdle, hypotonic, myotonic), inflammatory myopathies (polio, spinal muscular atrophies, hereditary motor sensory neuropathies), myelodysplasia, spondyloarthropathies, cervical spine (congenital malformations, hypermobility), and spinal deformities (scoliosis, kyphosis, spondylosis, and spondylolisthesis). | 39 | 1 | * | * | | * |
| | | | | A2.44 | Understand the characteristics & history of trauma. | 39 | 1 | * | * | | * |
| | | | | A2.45 | Understand clinical manifestations of gait disorders and fractures. | 39 | 1 | * | * | | * |
| | | | Senior | A2.46 | Manage complex skeletal dysplasias. | 39 | 1 | | * | | * |
| | | | | A2.47 | Understand the etiology, and diagnosis, of complex hematologic disorders. | 39 | 1 | | * | | * |
| | | | | A2.48 | Recognize cerebral palsy, juvenile rheumatoid arthritis, and complex spinal deformities. | 39 | 1 | | * | | * |
| | | | | A2.49 | Understand the diagnostic features of complex neuromuscular disorders. | 39 | 1 | | * | | * |

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|  |  |  |  | A2.50 | Understand, and recognize complex upper limb, leg length, hip, and lower limb deformities and disorders. | 39 | 1 |  | * |  | * |
|  |  |  |  | A2.51 | Understand the clinical manifestations and long-term prognosis of complex gait disorders and fractures. | 39 | 1 |  | * |  | * |
|  |  |  |  | A2.52 | Understand the characteristics, history of complex trauma. | 39 | 1 |  | * |  | * |
|  |  | Spine surgery | Junior | A2.53 | Evaluate the following conditions via a thorough H&P:<br>▯ Cervical<br>o Degenerative spondylosis<br>o Radiculopathy/disc herniation<br>o Myelopathy<br>o Rheumatoid arthritis<br>▯ Thoracolumbar<br>o Degenerative spondylosis<br>o Spinal stenosis<br>o Disc herniation/radiculopathy<br>o Scoliosis<br>o Spondylolisthesis<br>▯ Systemic<br>o Spinal osteomyelitis<br>o Metastatic spine tumor<br>o Osteoporosis<br>▯ Fractures and dislocations | 39, 40 | 2 |  |  | * |  |
|  |  |  |  | A2.54 | dentify appropriate radiographic imaging studies and discuss the advantages and disadvantages of each study vis-à-vis the suspected diagnosis | 40 | 1 | * | * |  | * |
|  |  |  |  | A2.55 | Obtain a comprehensive history | 40 | 2 |  |  | * |  |
|  |  |  |  | A2.56 | Formulate a differential diagnosis | 40 | 1 | * | * |  | * |
|  |  |  |  | A2.57 | Outline the etiology, or possible etiologies of the specific condition | 40 | 1 | * | * |  | * |
|  |  |  |  | A2.58 | Perform any relevant condition-specific physical examination including specific provocative maneuvers and tests (e.g., Hoffman's sign, femoral stretch test, etc.) | 40 | 2 |  |  |  |  |
|  |  |  |  | A2.59 | Perform basic radiographic interpretation of spinal radiographs, CT, and MRI studies | 40 | 1 | * | * |  | * |
|  |  |  |  | A2.60 | Evaluate the status of postoperative patients, including:<br>▯ Neurologic status<br>▯ Wound status<br>▯ Wound drainage | 40 | 1,2 | * | * | * | * |
|  |  |  | Senior | A2.61 | Effectively be able to evaluate the following conditions via a thorough history and physical examination:<br>▯ Complex deformity<br>o Post-traumatic kyphosis<br>o Flatback syndrome<br>▯ Failed back syndrome<br>▯ Pseudarthrosis<br>▯ Adjacent segment degeneration | 40 | 2 |  |  | * |  |
|  |  |  |  | A2.62 | Demonstrate ability to interpret advanced imaging studies such as MRI/CT myelogram | 40 | 1 |  | * |  | * |
|  |  |  |  | A2.63 | Select appropriate diagnostic interventions for patients with postoperative complications:<br>▯ Postoperative neurologic deficit<br>▯ Epidural hematoma<br>▯ Postoperative wound infection<br>▯ Deep vein thrombosis/pulmonary embolism<br>▯ Dural tear/cerebrospinal fluid fistula | 41 | 1 |  | * |  | * |
|  |  | Sports medicine | Junior | A2.64 | Perform a physical examination of the shoulder and identify all pertinent anatomic landmarks, quantify range of motion, evaluate glenohumeral stability of the rotator cuff and the acromioclavicular (AC) joint | 41 | 2 |  |  | * |  |
|  |  |  |  | A2.65 | Make a clinical diagnosis of the following: adhesive capsulitis, anterior instability, posterior instability, rotator cuff tendinitis, impingement syndrome, AC joint arthrosis, AC joint separation and grade, and biceps rupture. | 41 | 1,2 | * | * | * | * |
|  |  |  |  | A2.66 | Understand the differential diagnosis for anterior knee pain and patellar instability. | 41 | 1 | * | * |  | * |
|  |  |  |  | A2.67 | Be familiar with special radiographic examinations of the leg and thigh including MRI, CT, and nuclear medicine studies | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.68 | Understand the presentation of the following related to the ankle: the different types of Achilles tendinitis, the different types of ankle sprains, and ankle instability. | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.69 | Understand the presentation of Panner's disease (OCD of capitellum) and valgus extension overload | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.70 | Understand the presentation of meniscal cysts and discoid menisci | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.71 | Understand the typical history and presentation of anterior or posterior cruciate ligament injuries | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.72 | Discuss the possible etiologies of peroneal nerve injury and recognize the signs of peroneal nerve injury. | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.73 | Identify all pertinent anatomic landmarks of the knee and evaluate knee range of motion. | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.74 | Make a clinical diagnosis of the following related to the shoulder: labral tear and rotator cuff tear. | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.75 | Understand the presentation, and evaluation of common postoperative complications of infection and deep venous thrombosis | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.76 | Evaluate and grade knee stability in varus/valgus, anterior/posterior, and rotatory directions using appropriate clinical tests | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.77 | Make a clinical diagnosis of the following: ACL tear, PCL tear, MCL injury/tear, lateral collateral ligament injury/tear, chondromalacia patella, patella instability, degenerative arthritis, prepatella bursitis, tibial plateau fracture, quadriceps rupture, patellar tendon rupture, knee dislocation. | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.78 | Make a clinical diagnosis of the following related to the knee: posterior lateral corner injuries, meniscal tear, loose body, synovitis, plica syndrome, and vastus medialis oblique avulsion | 42 | 1 | * | * |  | * |
|  |  |  |  | A2.79 | Diagnose the following related to the leg and thigh: exertional compartment syndrome, medial tibial stress syndrome, shin splints, gastrocnemius strain/tear, and Maisonneuve fracture/syndesmosis injury. | 43 | 1 | * | * |  | * |
|  |  |  |  | A2.80 | Perform a physical examination of the elbow and identify all pertinent landmarks. | 43 | 2 |  |  | * |  |
|  |  |  |  | A2.81 | Evaluate range of motion and stability of the elbow joint. | 43 | 2 |  |  | * |  |
|  |  |  |  | A2.82 | Diagnose the following related to the elbow: Lateral epicondylitis, medial epicondylitis, ulnar nerve entrapment, valgus extension overload, ulnar collateral ligament incompetence, biceps tendinitis or distal rupture, OCD of capitellum, and Olecranon bursitis. | 43 | 1 | * | * |  | * |
|  |  |  | Senior | A2.83 | Understand the incidence, natural history, cause, historical features, examination findings, classification, of the following key sports-related injuries:<br>▯ Ankle sprains<br>▯ Turf toe<br>▯ Fifth metatarsal fractures<br>▯ Lisfranc injuries<br>▯ Achilles pathology<br>▯ Gastroc strains<br>▯ ACL injuries<br>▯ Meniscal injuries<br>▯ Osteochondral defects and cartilage injuries<br>▯ Patellofemoral pain syndrome<br>▯ Patella dislocations and instability<br>▯ Quadriceps mechanism injuries<br>▯ Hamstring injuries<br>▯ Stress fractures<br>▯ Multiligament injuries<br>▯ AC sprains and injuries<br>▯ Anterior instability<br>▯ Multidirectional instability<br>▯ Rotator cuff pathology and tears<br>▯ SLAP tears<br>▯ Throwing injuries<br>▯ Ulnar collateral ligament injuries<br>▯ Distal biceps ruptures<br>▯ Gamekeeper's injury<br>▯ Mallet finger<br>▯ Jersey finger | 43, 44 | 1,2 |  | * | * | * |
|  |  |  |  | A2.84 | Understand the incidence, natural history, cause, historical features, examination findings, classification, and return to play issues with the following sports-related injuries:<br>▯ Concussion<br>▯ Cervical spine injuries<br>▯ Stingers<br>▯ Ankle sprains<br>▯ Muscle injuries<br>▯ Stress fractures | 44 | 1,2 |  | * | * | * |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A2.85 | Understand the pre-participation examination and key medical issues in sports medicine:<br> Concussion<br> Ocular trauma<br> Asthma<br> Sudden cardiac death<br> Visceral injury<br> Key infections (mononucleosis, HIV, MRSA, herpes)<br> Ergogenic aids | 44 | 1,2 | | * | * | * |
| | | | | A2.86 | Take a detailed and appropriate injury-specific history and formulate a differential of pathology, appropriate tests to order, and appropriate indications for surgery. | 44 | 2 | | | * | |
| | | | | A2.87 | Understand the presentation and evaluation, of common postoperative complications such as arthrofibrosis. | 44 | 1 | | * | | * |
| | | | | A2.88 | Perform procedures necessary for the treatment of athletic-associated injuries, with a clear understanding of surgical indications. In particular, the resident should feel confident in their ability to perform the following at the conclusion of their rotation:<br> Diagnostic knee arthroscopy<br> Diagnostic shoulder arthroscopy | 44 | 2 | | | * | |
| | | | | A2.89 | Interpret and synthesize patient history, clinical examination, and diagnostic tests into coherent diagnoses for each condition | 44 | 1 | | * | | * |
| | | Upper extremity | Junior | A2.90 | Understand the incidence, natural history, cause, presentation, examination findings, classification, and non-operative and operative indications of the following key shoulder conditions:<br> AC sprains, injuries, and conditions<br> Sternoclavicular injuries<br> Anterior instability<br> Posterior instability<br> Multidirectional instability<br> Voluntary instability<br> Rotator cuff pathology and tears<br> Disorders of the biceps tendon<br> Shoulder fractures:<br>o Clavicle<br>o Distal clavicle<br>o Scapula and glenoid<br>o Proximal humerus fractures: greater tuberosity, lesser tuberosity, surgical neck, head split, 3-part, 4-part, valgus<br>o Impacted 4-part fractures, fracture-dislocation<br> Arthritic conditions of the shoulder:<br>o Osteoarthritis<br>o Rheumatoid arthritis<br>o Avascular necrosis<br>o Traumatic arthritis/arthritis of instability<br>o Rotator cuff arthropathy<br>o Locked dislocations/instability with bone loss<br>o Disorders of the scapula<br> Nerve compression disorders about the shoulder<br> Frozen shoulder<br> Calcific tendonitis | 45 | 1 | * | * | | * |
| | | | | A2.91 | Know the appropriate shoulder radiographs and further imaging studies that should be ordered and evaluated in all of the above conditions. | 46 | 1 | * | * | | * |
| | | | | A2.92 | Take a detailed and appropriate injury-specific history, formulate a differential of pathology, order appropriate tests, and present the case to the attending. | 46 | 1,2 | * | * | * | * |
| | | | | A2.93 | Interpret and synthesize patient history, clinical examination, and diagnostic tests into coherent diagnoses for each condition | 46 | 1 | * | * | | * |
| | | | | A2.94 | Understand the presentation, and evaluation of common postoperative complications such as arthrofibrosis, recurrent instability, and re-tear of the rotator cuff. | 46 | 1 | * | * | | * |
| | | Trauma | Junior | A2.95 | Understand the diagnosis of orthopaedic trauma and related disorders. | 47 | 1 | * | * | | * |
| | | | | A2.96 | Understand and develop a systematic approach to the evaluation of trauma patients in all areas of the hospital, including the emergency department, in-patient wards, and clinic. | 47 | 1 | * | * | | * |
| | | | | A2.97 | Classify and correctly work up periarticular injuries including pilon, plateau, distal femur, distal radius, elbow, and shoulder fractures. | 47 | 1 | * | * | | * |
| | | | | A2.98 | Classify and correctly work up pelvis and acetabular injuries. | 47 | 1 | * | * | | * |
| | | | | A2.99 | Recognize orthopaedic surgical emergencies. | 47 | 1 | * | * | | * |
| | | | | A2.100 | Evaluate traumatic fractures, dislocations, and injuries in the emergency department. | 47 | 1 | * | * | | * |
| | | | Senior | A2.101 | Know the complications of each injury. | 48 | 1 | | * | | * |
| | | | | A2.102 | Know the classification of most skeletal injuries i.e. fractures and dislocations of the shoulder, arm, elbow, forearm, wrist, pelvis, acetabulum, femur, knee, ankle, and foot. | 48 | 1 | | * | | * |
| | | General orthopaedics | All | A2.103 | Discuss the necessary elements of the examination of the orthopaedic patient in the outpatient or clinic setting, including the elicitation of an appropriate history, physical examination techniques, imaging studies, and necessary laboratory studies. | 31 | 1 | * | * | | * |
| | | | | A2.104 | Demonstrate the assessment of orthopaedic injuries and illnesses commonly encountered in the emergency room, including appropriate physical and imaging examinations, recognition of important features of the condition, and the appropriate type of procedure required for initial treatment. | 31 | 1 | * | * | | * |
| | | | | A2.105 | Demonstrate the appropriate preoperative work-up of orthopaedic patients, including the appropriate problem-focused orthopaedic physical examination, functional assessment, and imaging studies. | 31 | 1 | * | * | | * |
| | | | | A2.106 | Demonstrate physical examination techniques appropriate to the patient's chief complaint and history, and arrange further studies as needed. | 31 | 2 | * | * | | * |
| | | | | A2.107 | Perform a basic interpretation of imaging and laboratory study findings in the context of the patient's history and examination. | 31 | 1 | * | * | | * |
| | | | | A2.108 | Perform an appropriate preoperative screening history and physical examination, and refer the patient for further examinations as needed for preoperative clearance for the procedure in question. | 31 | 2 | * | * | | * |
| | | | | A2.109 | Evaluate and determine appropriate interventions for the orthopaedic and postoperative issues that arise in the care of postoperative patients (i.e., pain control, bleeding and drainage, fever, traction, and postoperative stabilization). | 32 | 1 | * | * | | * |
| | | | | A2.110 | Demonstrate the ability to elicit the presence and location of physical symptoms with cognitively impaired patients. | 32 | 1,2 | * | * | * | * |
| | | | | A2.111 | Perform a complete and appropriate patient assessment<br>- Identify and explore issues to be addressed in a patient encounter effectively, including the patient's context and preferences<br>- Elicit a history that is relevant, concise, and accurate with regard to context and preferences for the purposes of prevention and health promotion, diagnosis, and/or management<br>- Perform a focused physical examination that is relevant and accurate for the purposes of prevention and health promotion, diagnosis, and/or management<br>- Select medically appropriate investigative methods in a resource-effective and ethical manner<br>- Demonstrate effective clinical problem-solving and judgment to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plans | 13 | 1,2 | * | * | * | * |
| | | | | A2.112 | Demonstrate proficient and appropriate use of diagnostics procedural skills | 13 | 2 | | | * | |
| | A3. Management | Arthroplasty | Junior | A3.1 | Outline a treatment plan during office sessions, clinic, and rounds for bursal and soft-tissue diseases about the hip/knee and then | 32 | 1 | * | * | | * |
| | | | | A3.2 | Explain preoperative planning of standard total hip/knee replacement. | 33 | 1 | * | * | | * |
| | | | | A3.3 | Based on a careful history and physical examination, the resident will be able to formulate an approach to the evaluation of patients with pain at various intervals after a total hip and knee replacement. | 33 | 1 | * | * | | * |
| | | | | A3.4 | Understand the perioperative considerations for THA and TKA including preoperative medical evaluation, blood conservation, deep vein thrombosis prophylaxis, and rehabilitation. | 33 | 1 | * | * | | * |
| | | | | A3.5 | Explain the rationale for implant selection (type, size, and configuration) for primary THA/TKA cases. | 33 | 1 | * | * | | * |
| | | | Senior | A3.6 | Based on the information, be able to propose a treatment plan for these disorders: osteoarthritis (primary and secondary), rheumatoid arthritis, seronegative arthritis, septic arthritis, osteomyelitis, PVNS, hemophilic arthropathy, osteonecrosis, and Charcot arthropathy. | 33 | 1 | | * | | * |
| | | | | A3.7 | Propose treatment for patients with anterior knee pain. | 33 | 1 | | * | | * |
| | | | | A3.8 | Develop a preoperative plan for revision total hip arthroplasty | 33 | | | * | | * |
| | | | | A3.9 | Manage early & late complications after THA/TKA. | 33 | 1 | | * | | * |
| | | | | A3.10 | Explain the indications for knee fusion and be familiar with various methods of fusion. | 33 | 1 | | * | | * |
| | | | | A3.11 | Make appropriate judgments based on data obtained from ancillary studies | 33 | 1 | | * | | * |
| | | | | A3.12 | Thoroughly comprehend arthroplasty complications and be able to formulate an approach to the treatment of these problems. | 34 | 1 | | * | | * |
| | | | | A3.13 | Understand the techniques for the surgical treatment of osteolysis about the primary THA and TKA. | 34 | 1 | | * | | * |
| | | | | A3.14 | Discuss the treatment options for infected THA/TKA including two-stage reconstruction. | 34 | 1 | | * | | * |
| | | | | A3.15 | Discuss the management and surgical approach to periprosthetic fractures about the THA and TKA. | 34 | 1 | | * | | * |
| | | | | A3.16 | Remove complex hardware around the hip and knee. | 34 | 2 | | | * | |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A3.17 | Preoperatively plan for a cemented or cementless THA/TKA, and be able to competently perform uncomplicated THA/TKA surgery. | 34 | 1 | | * | | * |
| | | | | A3.18 | Perform amputations about the knee pre- and post-arthroplasty. | 34 | 2 | | | * | |
| | | | | A3.19 | Perform various parts of standard revision THA/TKA, complex THA/TKA, and revision of septic THA/TKA procedures. | 34 | 2 | | | * | |
| | | | | A3.20 | Perform femoral allografting (intercalary or interpositional). | 34 | 2 | | | * | |
| | | | | A3.21 | Reduce a dislocated hip and know how to manipulate a hip under anesthesia to determine the stable range of motion. | 34 | 2 | | | * | |
| | | | | A3.22 | Formulate an operative and non-operative plan of action to address the unstable THA. | 34 | 1 | | * | | * |
| | | | | A3.23 | Perform a complete synovectomy about the THA/TKA. | 34 | 2 | | | * | |
| | | | | A3.24 | Plan and carry out a successful cemented, hybrid, and cementless standard primary THA. | 34 | 1 | | * | | * |
| | | | | A3.25 | Explain the rationale for implant selection (type, size, and configuration) for revision THA/TKA cases and have a thorough understanding of the design rationale for THA and TKA implants. | 34 | 1 | | * | | * |
| | | | | A3.26 | Demonstrate a thorough understanding of the use and indications of the primary cementless femoral component, including cementless femoral components (modular), cementless femoral component (extensively coated), hydroxyapatite-coated implants, proximal fixation of the non-cemented stem, and the tapered femoral component. | 34 | 1 | | * | | * |
| | | | | A3.27 | Describe the application of allografts for THA/TKA surgery. | 34 | 1 | | * | | * |
| | | | | A3.28 | Thoroughly comprehend the principles of THA including: offset, leg length, range of motion, stability, and templating. | 34 | 1 | | * | | * |
| | | | | A3.29 | Understand the principles of femoral and pelvic osteotomies and be able to draw accurate preoperative plans for the procedure. | 34 | 1 | | * | | * |
| | | | | A3.30 | Summarize the indications for hip/knee arthrodesis and illustrate the techniques commonly used. | 34 | 1 | | * | | * |
| | | | | A3.31 | Describe the indications for a resection arthroplasty and synovectomy of the hip. | 34 | 1 | | * | | * |
| | | | | A3.32 | Evaluate patients with painful total joint arthroplasty and make appropriate judgments based on history, physical examination, and ancillary studies. The senior resident will be expected to be able to present the problem, analyze the data, and select a plan of action for these patients. | 34 | 1,2 | | * | * | * |
| | | | | A3.33 | Have and select the optimal flap to address soft-tissue problems (e.g. delayed healing, infection) after TKA. | 35 | 1 | | * | | * |
| | | | | A3.34 | Know the indications for, and the techniques of, soft-tissue releases and neurectomy about the hip. | 35 | 1 | | * | | * |
| | | | | A3.35 | Have developed not only competence in amputation surgery about the knee but also be able to discuss the rationale for amputation at various levels and the prosthetic options for each level. | 35 | 1 | | * | | * |
| | | | | A3.36 | Understand the principles, exposure, and techniques of complex THA/TKA reconstructions. | 35 | 1 | | * | | * |
| | | | | A3.37 | Understand the indications and techniques for the adjunct procedures used to treat AVN (e.g. bone graft, vascularized bone graft). | 35 | 1 | | * | | * |
| | | | | A3.38 | State the principles of osteotomy for medial and lateral compartment arthritis. | 35 | 1 | | * | | * |
| | | | | A3.39 | Preoperatively plan for complicated THA surgery including THA in the posttraumatic patient, complex primary acetabular replacement, complex primary femoral replacement, and hip fractures treated by arthroplasty. | 35 | 1 | | * | | * |
| | | | | A3.40 | Preoperatively plan for complicated TKA surgery including rheumatoid arthritis, flexion contractures, and varus or valgus deformities. | 35 | 1 | | * | | * |
| | | | | A3.41 | Perform soft-tissue releases about the knee to correct severe varus/valgus deformities with TKA. | 35 | 2 | | | * | |
| | | | | A3.42 | Have the surgical skill to balance the flexion and extension gaps during TKA. | 35 | 2 | | | * | |
| | | | | A3.43 | Plan for revision THA/TKA (including 2-stage for sepsis) and perform parts of this surgery. | 35 | 1 | | * | | * |
| | | | | A3.44 | Plan for and perform parts of revision of the femoral THA component utilizing cemented, uncemented, and extensively coated modular implants with or without bulk allografts and struts and impaction grafting techniques. | 35 | 1,2 | | * | * | * |
| | | | | A3.45 | Plan for and perform parts of revision of the acetabulum by cementless acetabular reconstruction, structural grafting, bone packing, and using cement with all-polyethylene components and acetabular cages. | 35 | 1,2 | | * | * | * |
| | | | | A3.46 | Plan the approach for excision of heterotopic bone and carry out the procedure. | 35 | 1 | | * | | * |
| | | | | A3.47 | Plan for a femoral or pelvic osteotomy and be able to understand the approach and technique of this surgery. | 35 | 1 | | * | | * |
| | | | | A3.48 | Perform most of a hip/knee fusion. | 35 | 2 | | | * | |
| | | | | A3.49 | Understand and be able to perform parts of the removal of failed hip and knee components and retained cement mantel. | 35 | 1,2 | | * | * | * |
| | | | | A3.50 | Demonstrate competence in planning these cases and demonstrate proficiency in performing distal femoral or upper tibial osteotomies. | 35 | 1,2 | | * | * | * |
| | | Foot and ankle surgery | Junior | A3.51 | Treatment outline of flatfoot or pes planus | 36 | 1 | * | * | | * |
| | | | Senior | A3.52 | Understand the detailed management approaches (both operative and non-operative) of flatfoot or pes planus. | 36 | 1 | | * | | * |
| | | | | A3.53 | Understand the treatment of adult clubfoot. | 36 | 1 | | * | | * |
| | | | | A3.54 | Understand the treatment of cavus foot. | 36 | 1 | | * | | * |
| | | | | A3.55 | Understand ligament reconstruction of the ankle. | 36 | 1 | | * | | * |
| | | | | A3.56 | Understand osteoarthritis around the ankle and foot. | 36 | 1 | | * | | * |
| | | | | A3.57 | Understand common tumors of the foot and ankle such as giant cell tumor, fibroma, ganglion cyst, lipoma, etc. | 36 | 1 | | * | | * |
| | | | | A3.58 | Understand and perform procedures related to rheumatoid foot and ankle. | 36 | 1,2 | | * | * | * |
| | | | | A3.59 | Perform procedures related to the forefoot (i.e., bunionectomy, distal soft-tissue procedure, osteotomies for Hallux valgus correction, removal of interdigital neuroma, hallux interphalangeal fusion with tendon transfer). | 36 | 2 | | | * | |
| | | | | A3.60 | Perform procedures related to the hindfoot (i.e., triple arthrodesis, resection of Haglund's deformity, tarsal tunnel release, plantar fascial stripping, Achilles tendon lengthening/repair). | 36 | 2 | | | * | |
| | | | | A3.61 | Perform procedures related to the ankle such as ankle arthroscopy, repair of osteochondritis dissecans (OCD) of the talus, and ankle fusion. | 36 | 2 | | | * | |
| | | | | A3.62 | Perform amputations (i.e., digital disarticulation, Syme amputation, Lisfranc amputation, Chopart amputation, below-knee amputation, calcanectomy). | 36 | 2 | | | * | |
| | | | | A3.63 | Perform trauma procedures related to the foot and ankle (i.e., open reduction internal fixation [ORIF] of displaced phalangeal fractures, ORIF of Lisfranc fracture dislocation, ORIF of talar fractures, etc.). | 36 | 2 | | | * | |
| | | Oncology | Junior | A3.64 | Know the general principles for using adjuvant treatment modalities (radiation therapy and chemotherapy) and the surgical options available for palliative treatment of metastatic malignancies, including the evaluation and treatment of pending and overt pathologic fractures. | 37 | 1 | * | * | | * |
| | | | | A3.65 | Understand the surgical treatment, and surgical options available for the palliative treatment of primary bone and soft-tissue neoplasms, both benign and malignant. | 37 | 1 | * | * | | * |
| | | | | A3.66 | Know the spectrum of benign and malignant neoplastic disease entities and tumor-like conditions encountered in musculoskeletal oncology | 37 | 1 | * | * | | * |
| | | | | A3.67 | Understand the staging systems and classification of surgical procedures utilized by musculoskeletal oncologists | 37 | 1 | * | * | | * |
| | | | | A3.68 | Understand the psychological aspects of patient management and the techniques for pain management in orthopaedic oncology patients. | 37 | 1 | * | * | | * |
| | | | | A3.69 | Know general surgical technique for bone and soft-tissue resections and appropriate margin status | 37 | 1 | * | * | | * |
| | | | | A3.70 | Assist in planning of fine needle aspiration, true-cut needle biopsy, and open surgical biopsy in the management of soft-tissue sarcoma. Know how and when each method is optimally utilized. | 37 | 2 | | | * | |
| | | | | A3.71 | Plan and assist in performing core needle biopsy of bone lesions with fluoroscopic control and open biopsies of both soft-tissue and bone tumors in the operating room when appropriate to the stage of training. | 37 | 1,2 | * | * | * | * |
| | | | | A3.72 | Perform surgical procedures for the treatment of benign bone tumors, benign soft-tissue tumors, and metastatic disease. | 37 | 2 | | | | |
| | | | | A3.73 | Know the surgical options available for the palliative treatment of malignant metastases to bone including the evaluation and treatment of pending and overt pathologic fractures | 37 | 1 | * | * | | * |
| | | | | A3.74 | Understand the management of surgical specimens undergoing light microscopy, immunohistochemistry, and cytogenetics. | 37 | 1 | * | * | | * |
| | | | | A3.75 | Identify patient position, surgical approach, and pertinent anatomy for each tumor location | 37 | 1,2 | * | * | * | * |
| | | | Senior | A3.76 | Know the reconstructive options following treatment of benign bone tumors (i.e. cementation, internal fixation, bone grafting, and the use of graft alternatives). | 37 | 1 | | * | | * |
| | | | | A3.77 | Know the reconstructive options used in the treatment of malignant bone tumors (i.e. allograft, autograft, arthrodesis, total joint arthroplasties, and composite arthroplasties). | 37 | 1 | | * | | * |
| | | | | A3.78 | Understand the advantages and disadvantages of limb salvage vs. amputation in the management of bone and soft-tissue tumors. | 38 | 1 | | * | | * |
| | | | | A3.79 | Know the reconstructive options utilized following the treatment of malignant soft-tissue tumors (i.e. split-thickness skin grafting, local rotational flaps, and amputation). | 38 | 1 | | * | | * |
| | | | | A3.80 | Plan and perform optimal biopsy procedures utilizing core needle biopsy of soft-tissue masses as an outpatient-based procedure. | 38 | 1,2 | | * | * | * |
| | | | | A3.81 | Plan and perform core needle biopsy of bone lesions with fluoroscopic control and open biopsies of both soft-tissue and bone tumors in the operating room. | 38 | 1,2 | | * | * | * |
| | | | | A3.82 | Formulate a specific treatment plan for a wide spectrum of orthopaedic oncology conditions, both benign and malignant, involving bone and soft-tissue tumors and tumor-like conditions. | 38 | 1 | | * | | * |
| | | | | A3.83 | Perform surgical procedures for the treatment of benign bone tumors, benign soft-tissue tumors and metastatic disease. | 38 | 2 | | | * | |
| | | Pediatric orthopaedics | Junior | A3.84 | Know the appropriate local anesthesia or conscious sedation for the safety and comfort of the pediatric patient during outpatient orthopaedic procedures. | 38 | 1 | * | * | | * |
| | | | | A3.85 | Understand treatment of gait disorders and fractures. | 39 | 1 | * | * | | * |

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|---|---|---|---|---|---|---|---|---|---|
| | | A3.86 | Understand the management of constitutional diseases with bone pathology (rickets, mucopolysaccah, calcium/phosphorous disorders), metabolic (rickets, osteomal, renal osteodystrophy, hypophosphatemia, parathyroid or thyroid disorders, heavy metal, juvenile osteoporosis, hypervitaminosis, scurvy, infectious hyperostosis), connective tissues (Ehlers-Danlos, Marfan, Down syndrome), and short stature. | 38 | 1 | * | * | | * |
| | | A3.87 | Understand the treatment of genetic disorders, including autosomal dominant, autosomal recessive, sex-linked dominant, sexlinked recessive, chromosomal, and multifactorial disorders. Recognize the diseases that can be identified through amniocentesis. | 38 | 1 | * | * | | * |
| | | A3.88 | Understand the management of muscular dystrophies (such as Duchenne, Becker, limb Girdle, hypotonic, myotonic), inflammatory myopathies (polio, spinal muscular atrophies, hereditary motor sensory neuropathies), myelodysplasia, spondyloarthropathies, cervical spine (congenital malformations, hypermobility), and spinal deformities (scoliosis, kyphosis, spondylosis, and spondylolisthesis). | 39 | 1 | * | * | | * |
| | | A3.89 | Understand management, and indications of surgery for trauma. | 39 | 1 | * | * | | * |
| Pediatric orthopaedics | Senior | A3.90 | Understand the management of complex neuromuscular disorders. | 39 | 1 | | * | | * |
| | | A3.91 | Manage complex upper limb, leg length, hip, and lower limb deformities and disorders. | 39 | 1 | | * | | * |
| | | A3.92 | Understand the treatment of complex gait disorders and fractures. | 39 | 1 | | * | | * |
| | | A3.93 | Understand the management, and indications for additional treatment of complex trauma. | 39 | 1 | | * | | * |
| | | A3.94 | Manage complex skeletal dysplasias. | 39 | 1 | | * | | * |
| | | A3.95 | Understand the treatment of complex hematologic disorders. | 39 | 1 | | * | | * |
| | | A3.96 | Treat, in conjunction with a multidisciplinary team, cerebral palsy, juvenile rheumatoid arthritis, and complex spinal deformities. | 39 | 1 | | * | | * |
| Spine surgery | Junior | A3.97 | Describe appropriate non-operative treatment options (if they exist) | 40 | 1 | * | * | | * |
| | | A3.98 | Describe appropriate operative treatment options (if they exist) | 40 | 1 | * | * | | * |
| | | A3.99 | Describe possible complications of non-operative and operative treatment | 40 | 1 | * | * | | * |
| | | A3.100 | Outline the rehabilitation program involved in non-operative and operative treatment | 40 | 1 | * | * | | * |
| | | A3.101 | Demonstrate competence in the operating room to:<br> Position patients for anterior and posterior procedures<br> Apply Gardner-Wells tongs/Mayfield headrest<br> Prep and drape the operative field<br> Close the surgical wound<br> Apply postoperative dressing | 40 | 2 | | | * | |
| | | A3.102 | Perform simple invasive procedures including:<br> Initial surgical dissection of the posterior approach to cervical or lumbar spine<br> Iliac crest bone graft harvest<br> Insertion of lumbar pedicle screws excluding scoliosis | 40 | 2 | | | * | |
| Spine surgery | Senior | A3.103 | Discuss various surgical approaches relevant to spinal disorders and formulate an appropriate surgical plan | 41 | 1 | | * | | * |
| | | A3.104 | Perform surgical procedures:<br> Halo application<br> Lumbar microdiscectomy<br> Anterior cervical discectomy<br> Lumbar laminectomy<br>o or 2-level instrumented lumbar fusion<br> Posterior cervical fusion with lateral mass screws between C3 and C6 | 41 | 2 | | | * | |
| | | A3.105 | Select appropriate therapeutic interventions for patients with postoperative complications:<br> Postoperative neurologic deficit<br> Epidural hematoma<br> Postoperative wound infection<br> Deep vein thrombosis/pulmonary embolism<br> Dural tear/cerebrospinal fluid fistula | 41 | 1 | | * | | * |
| Sports medicine | Junior | A3.106 | Describe the rationale for non-operative treatment of the following pathologic entities related to the shoulder: rotator cuff tendinitis/tear/impingement, glenohumeral instability, adhesive capsulitis | 41 | 1 | | | | |
| | | A3.107 | Understand physical therapy modalities in general sports medicine | 41 | 1 | * | * | | * |
| | | A3.108 | Understand and weigh surgical risks and potential benefits for each patient for each surgical procedure considered. | 41 | 1 | * | * | | * |
| | | A3.109 | Describe the indications and rationale for the following procedures related to the shoulder (describe both open and arthroscopic variations of the procedure, indication for each, and rehabilitation protocol): rotator cuff repair, subacromial decompression, stabilization procedures, Mumford procedure. | 41 | 1 | * | * | | * |
| | | A3.110 | Understand the treatment for anterior knee pain and patellar instability. | 41 | 1 | * | * | | * |
| | | A3.111 | Know the indications for the following procedures related to the shoulder: distal clavicle excision and open decompression. | 42 | 1 | * | * | | * |
| | | A3.112 | Be familiar with the various types of knee braces | 42 | 1 | * | * | | * |
| | | A3.113 | Understand the healing potential and current treatment options of meniscal tears and chondral defects. | 42 | 1 | * | * | | * |
| | | A3.114 | Understand the non-operative treatment of patella tendinitis, saphenous neuritis, and MCL sprains | 42 | 1 | * | * | | * |
| | | A3.115 | Understand the postoperative rehabilitation of meniscal repairs and ACL reconstructions | 42 | 1 | * | * | | * |
| | | A3.116 | Understand the treatment of common postoperative complications of infection and deep venous thrombosis | 42 | 1 | * | * | | * |
| | | A3.117 | Understand the non-operative treatment of the following related to the ankle: Peroneal or posterior tibialis tendinitis, ankle sprains, Achilles tendinitis, ankle instability | 42 | 1 | * | * | | * |
| | | A3.118 | Understand the presentation and the non-operative treatment of the following related to the elbow: lateral epicondylitis, medial epicondylitis, ulnar collateral ligament sprains, ulnar neuritis, olecranon bursitis, and radial head fractures. | 42 | 1 | * | * | | * |
| | | A3.119 | Diagnose and describe the nonoperative treatment of the following related to the thigh/leg: quadriceps contusion, hamstring strain/tear, quadriceps strain/tear, hip flexor/adductor strain/tear, stress fracture of the femur or tibia, shin splints, and gastrocnemius strain/tear. | 42 | 1 | * | * | | * |
| | | A3.120 | Know the indications for the following procedures related to the knee: diagnostic arthroscopy, arthroscopic debridement, partial meniscectomy, abrasion chondroplasty, and patellar tendon repair. | 42, 43 | 1 | * | * | | * |
| | | A3.121 | Know the indications for and be able to perform the following procedures related to the leg/thigh: Compartment releases: Anterior, lateral, and posterior. | 43 | 1,2 | * | * | * | * |
| | | A3.122 | Know the indications for the following procedures related to the elbow: diagnostic arthroscopy, tennis elbow debridement, ORIF fractures, Olecranon bursa debridement/drainage. | 43 | 1 | * | * | | * |
| | | A3.123 | Describe the non-operative treatment of exertional compartment syndrome, medial tibial stress syndrome, and stress and traumatic fractures of the tibia and fibula. | 43 | 1 | * | * | | * |
| | | A3.124 | Perform the following procedures related to the elbow: reduction of dislocation, and saline arthrogram. | 43 | 2 | | | * | |
| Sports medicine | Senior | A3.125 | Understand the non-operative, and operative management of the following key sports-related injuries:<br> Ankle sprains<br> Turf toe<br> Fifth metatarsal fractures<br> Lisfranc injuries<br> Achilles pathology<br> Gastroc strains<br> ACL injuries<br> Meniscal injuries<br> Osteochondral defects and cartilage injuries<br> Patellofemoral pain syndrome<br> Patella dislocations and instability<br> Quadriceps mechanism injuries<br> Hamstring injuries<br> Stress fractures<br> Multiligament injuries<br> AC sprains and injuries<br> Anterior instability | 43, 44 | 1 | | * | | * |
| | | A3.126 | Multidirectional instability<br> Rotator cuff pathology and tears<br> SLAP tears<br> Throwing injuries<br> Ulnar collateral ligament injuries<br> Distal biceps ruptures<br> Gamekeeper's injury<br> Mallet finger<br> Jersey finger | | | | | | |
| | | A3.127 | Be familiar with the various types of knee braces | 44 | 1 | | * | | * |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | A3.128 | Demonstrate a thorough knowledge of the surgery; surgical approach; and the reasoning, biomechanics, placement, and technique of the surgical reconstructions/repair and implants used. | 44 | 1 | | * | | * | |
| | | A3.129 | Understand the postoperative protocols for various surgeries and the decision to return to full activity. | 44 | 1 | | * | | * | |
| | | A3.130 | Understand the treatment of common postoperative complications such as arthrofibrosis. | 44 | 1 | | * | | * | |
| | | A3.131 | Perform procedures necessary for the treatment of athletic-associated injuries, with a clear understanding of surgical indications. In particular, the resident should feel confident in their ability to perform the following at the conclusion of their rotation:<br>▯ Diagnostic knee arthroscopy<br>▯ Partial meniscectomy<br>▯ Microfracture<br>▯ Graft harvest and preparation for ACL surgery<br>▯ Notchplasty in ACL surgery<br>▯ Creation of bony tunnels for ACL reconstruction<br>▯ Achilles repair, patella tendon, or quadriceps tendon repair<br>▯ Diagnostic shoulder arthroscopy<br>▯ Biceps tenotomy<br>▯ Placement of suture anchors in instability or SLAP lesions<br>▯ Passage of suture through the capsule and/or labrum<br>▯ Tying arthroscopic suture knots<br>▯ Subacromial decompression<br>▯ Mumford procedure<br>▯ Placement of suture anchors in rotator cuff tears | 44<br>45 | 2 | | | * | | |
| | | A3.132 | Understand rotator cuff repair suture management | 45 | 1 | | * | | * | |
| | | A3.133 | First assist and anticipate all steps of an arthroscopic rotator cuff repair | 45 | 1,2 | | * | * | * | |
| Upper extremity | Junior | A3.134 | Demonstrate detailed knowledge of the anatomical structures of the shoulder and know all surgical approaches to the shoulder | 45 | 1 | * | * | | * | * |
| | | A3.135 | Understand the i non-operative and operative indications of the following key shoulder conditions:<br>▯ AC sprains, injuries, and conditions<br>▯ Sternoclavicular injuries<br>▯ Anterior instability<br>▯ Posterior instability<br>▯ Multidirectional instability<br>▯ Voluntary instability<br>▯ Rotator cuff pathology and tears<br>▯ Disorders of the biceps tendon<br>▯ Shoulder fractures:<br>o Clavicle<br>o Distal clavicle<br>o Scapula and glenoid<br>o Proximal humerus fractures: greater tuberosity, lesser tuberosity, surgical neck, head split, 3-part, 4-part, valgus<br>o Impacted 4-part fractures, fracture-dislocation<br>▯ Arthritic conditions of the shoulder:<br>o Osteoarthritis<br>o Rheumatoid arthritis<br>o Avascular necrosis<br>o Traumatic arthritis/arthritis of instability<br>o Rotator cuff arthropathy<br>o Locked dislocations/instability with bone loss<br>o Disorders of the scapula<br>▯ Nerve compression disorders about the shoulder<br>▯ Frozen shoulder<br>▯ Calcific tendonitis | 45 | 1 | * | * | | * | |
| | | A3.136 | Have a thorough knowledge of the surgery; surgical approach; and the reasoning, biomechanics, placement, and technique of the surgical reconstructions/repair and implants used. | 46 | 1 | * | * | | * | |
| | | A3.137 | Understand the postoperative protocols/decision-making for the postoperative care of rotator cuff, instability, fracture, and shoulder replacement surgeries | 46 | 1 | * | * | | * | |
| | | A3.138 | Understand the treatment of common postoperative complications such as arthrofibrosis, recurrent instability, and re-tear of the rotator cuff. | 46 | 1 | * | * | | * | |
| | | A3.139 | Appropriately position the patient for surgery | 46 | 1,2 | * | * | * | * | |
| | | A3.140 | Understand and perform closed reduction of an anterior or posterior shoulder dislocation | 46 | 1,2 | * | * | * | * | |
| | | A3.141 | In particular, feel confident in their ability to perform the following at the conclusion of their rotation:<br>▯ Gain entry to the joint<br>▯ Establish the anterior portal<br>▯ Probe all structures<br>▯ Appropriately place the scope in the subacromial space<br>▯ Understand suture management in rotator cuff and instability surgery<br>▯ First assist and anticipate all steps of an arthroscopic rotator cuff repair/instability surgery<br>▯ Understand the approaches to open shoulder surgery and when to use each<br>▯ Know the appropriate retractors and when to use each for open shoulder surgery<br>▯ Understand/anticipate and know how to assist in fracture fixation, humeral head replacement, total shoulder arthroscopy<br>▯ Understand the steps to expose the glenoid and know how to retract/assist in this aspect<br>▯ Understand the steps, concepts, and approaches to bone loss instability<br>▯ Expose, reduce with assistance, and plate a clavicle fracture | 46 | 1,2 | * | * | * | * | |
| Upper extremity | Senior | A3.142 | Discuss non-operative treatment options for all of the above-listed shoulder conditions. | 46 | 1 | | * | | * | |
| | | A3.143 | Understand the influence of bone loss in instability cases and how it affects surgical decision making. | 46 | 1 | | * | | * | |
| | | A3.144 | Know the reconstructive options used in the treatment of AC instability, anterior/posterior/multidirectional instability, rotator cuff tears, and biceps pathology. | 46 | 1 | | * | | * | |
| | | A3.145 | Know the reconstructive options that are available for the treatment of shoulder arthritis, as well as cuff arthropathy, and understand the different indications for total shoulder arthroplasty, humeral head replacement, and reverse total shoulder arthroplasty. | 46 | 1 | | * | | * | |
| | | A3.146 | Know the fixation options and be able to discuss the reasoning for how to treat fractures of the proximal humerus, clavicle, distal clavicle, glenoid, and scapula. | 46 | 1 | | * | | * | |
| | | A3.147 | Understand tuberosity reconstruction in a 4-part proximal humerus fracture | 47 | 1 | | * | | * | |
| | | A3.148 | Understand and be able to discuss the thought process and work-up for the treatment of more complex shoulder problems, in particular revision shoulder surgeries and failed surgery with complications. | 47 | 1 | | * | | * | |
| | | A3.149 | Perform a diagnostic shoulder arthroscopy | 47 | 2 | | | * | | |
| | | A3.150 | Perform a biceps tenotomy | 47 | 2 | | | * | | |
| | | A3.151 | Perform a deltopectoral approach down to the subscapularis | 47 | 2 | | | * | | |
| | | A3.152 | Perform a subacromial decompression | 47 | 2 | | | * | | |
| | | A3.153 | Takedown of the subscapularis | 47 | 2 | | | * | | |
| | | A3.154 | Perform a distal clavicle resection (Mumford procedure) | 47 | 2 | | | * | | |
| | | A3.155 | Place suture anchors in instability or SLAP lesions | 47 | 2 | | | * | | |
| | | A3.156 | Passage of suture through the capsule and/or labrum | 47 | 2 | | | * | | |
| | | A3.157 | Tie arthroscopic suture knots | 47 | 2 | | | * | | |
| | | A3.158 | Place suture anchors in rotator cuff tears | 47 | 2 | | | * | | |
| | | A3.159 | Understand rotator cuff repair suture management | 47 | 1 | | * | | * | |
| | | A3.160 | First assist and anticipate all steps of an arthroscopic rotator cuff repair | 47 | 1,2 | | * | * | * | |
| | | A3.161 | Pass suture through the rotator cuff arthroscopically | 47 | 2 | | | * | | |
| | | A3.162 | Perform the osteotomy and placement of the humeral component in a TSA | 47 | 2 | | | * | | |
| | | A3.163 | Understand and know how to perform the releases to expose the glenoid | 47 | 1,2 | | * | * | * | |
| | | A3.164 | Perform the reduction maneuver and plating of proximal humerus and clavicle fractures | 47 | 2 | | | * | | |
| Trauma | Junior | A3.165 | Classify and correctly work up periarticular injuries including pilon, plateau, distal femur, distal radius, elbow, and shoulder fractures. | 47 | 1 | * | * | | * | |
| | | A3.166 | Classify and correctly work up pelvis and acetabular injuries. | 47 | 1 | * | * | | * | |
| | | A3.167 | Understand the treatment methods for major joint dislocations, including when to order adjunctive tests including angiograms. | 47 | 1 | * | * | | * | |
| | | A3.168 | Manage patients on the orthopaedic trauma service under the direction of the senior resident or consultant. | 47 | 1 | * | * | | * | |
| | | A3.169 | Demonstrate effective patient management skills in both the inpatient and outpatient settings. | 47 | 1 | * | * | | * | |
| | | A3.170 | Demonstrate appropriate management of major joint dislocations. | 47 | 1 | * | * | | * | |
| | | A3.171 | Understand the  management of orthopaedic trauma and related disorders. | 47 | 1 | * | * | | * | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A3.172 | Develop the proper thought processes in regard to order of care of the multiply injured patient. | 47 | 1 | * | * | | * | |
| | | | | A3.173 | Understand the decision to advance from splint stabilization to operative stabilization via external fixator for periarticular injuries. | 47 | 1 | * | * | | * | |
| | | | | A3.174 | Advance understanding of appropriate patient positioning and operating room setup. | 48 | 1 | * | * | | * | |
| | | | | A3.175 | Demonstrate appropriate reduction techniques for basic fractures, including distal radius, forearm, humerus, tibial shaft, ankle, and foot fractures. | 48 | 2 | | | * | | |
| | | | | A3.176 | Apply proper splinting techniques for fractures. | 48 | 2 | | | * | | |
| | | | | A3.177 | Advance basic surgical techniques, including suturing and wound management. | 48 | 2 | | | * | | |
| | | | | A3.178 | Advance skill in the treatment of basic fractures including antegrade femoral and tibial nailing; retrograde femoral nailing; ORIF of the distal radius, both bone forearm, and ankle fractures | 48 | 2 | | | * | | |
| | | | | A3.179 | Understand and apply proper techniques in the placement of external fixators that span the knee and ankle. | 48 | 1,2 | * | * | * | * | |
| | | | Senior | A3.180 | Understand the priorities for initial management, triage, and initial stabilization of skeletal injuries in the multiply injured patient. | 48 | 1 | | * | | * | |
| | | | | A3.181 | Know the indications for various methods of operative and non-operative treatment of various injuries and learn to use clinical data to select a treatment method. | 48 | 1 | | * | | * | |
| | | | | A3.182 | Understand the postoperative management of trauma patients. | 48 | 1 | | * | | * | |
| | | | | A3.183 | Discuss the treatment options, prioritize, and initially stabilize musculoskeletal trauma. | 48 | 1 | | * | | * | |
| | | | | A3.184 | Become competent in the definitive management of basic fractures, i.e. long bone shaft fractures, hip fractures, ankle fractures, and fractures of the distal radius. | 48 | 1,2 | | * | * | * | |
| | | | | A3.185 | Demonstrate advancing competence in the management of pelvis, acetabulum, and periarticular fractures. | 48 | 1,2 | | * | * | * | |
| | | | | A3.186 | Show advanced knowledge in the use of external fixation for definitive and temporary stabilization. | 48 | 1,2 | | * | * | * | |
| | | General orthopaedics | All | A3.187 | Determine the appropriate local anesthesia or conscious sedation for the comfort of the patient during emergency room orthopaedic procedures. | 31 | 1 | * | * | | * | |
| | | | | A3.188 | Describe the treatment options (operative and non-operative, where appropriate) available to the patient based on pertinent findings of the patient assessment, be able to explain the advantages and disadvantages of the options to the patient and family, and recommend appropriate care for the patient's condition. | 31 | 1 | * | * | | * | |
| | | | | A3.189 | Understand the short- and long-term outpatient follow-up for patients appropriate to their conditions. | 31 | 1 | * | * | | * | |
| | | | | A3.190 | Demonstrate the management of orthopaedic injuries and illnesses commonly encountered in the emergency room, including appropriate physical and imaging examinations, recognition of important features of the condition, and the appropriate type of procedure required for initial treatment. | 31 | 1 | * | * | | * | |
| | | | | A3.191 | Demonstrate the manual techniques for initial management of commonly encountered orthopaedic and hand problems in the emergency room (i.e., reduction of fractures and dislocations, treatment of lacerations involving the joint or tendon, examination of soft-tissue injuries to the joint or muscle, and aspiration of the joint or fluid collection. | 31 | 2 | | | * | | |
| | | | | A3.192 | Demonstrate appropriate immobilization and dressing techniques for commonly encountered orthopaedic problems. | 31 | 2 | | | * | | |
| | | | | A3.193 | Evaluate and determine appropriate interventions for the orthopaedic and postoperative issues that arise in the care of postoperative patients (i.e., pain control, bleeding and drainage, fever, traction, and postoperative stabilization). | 32 | 1,2 | * | * | * | * | |
| | | | | A3.194 | Participate in the definitive management, including surgical intervention when appropriate, of conditions commonly encountered by the general orthopaedist (i.e., traumatic injuries of the spine and extremities; arthritic conditions involving the spine and extremities; orthopaedic infections; acute and chronic sports injuries involving bone, muscle, ligament, and tendons). | 32 | 2 | | | * | | |
| | | | | A3.195 | Recommend and arrange, as necessary, appropriate postoperative or postprocedure care including pain control, activity status including immobilization and/or therapeutic exercise, wound management, and appropriate nursing or custodial care for orthopaedic patients upon discharge. | 32 | 1 | * | * | | * | |
| | | | | A3.196 | Implement an effective management plan in collaboration with a patient and their family<br>- Demonstrate effective, appropriate, and timely application of therapeutic interventions relevant to orthopaedic surgery<br>- Ensure patients receive appropriate end-of-life care | 13 | 1 | * | * | | * | |
| | | | | A3.197 | Demonstrate proficient and appropriate use of theraputic procedural skills relevant to orthopaedic surgery<br>- Ensure adequate follow-up is arranged for procedures performed | 13 | 1,2 | * | * | * | * | |
| | | | | A3.198 | Ensure appropriate informed consent is obtained for therapies | 13 | 1 | * | * | | * | |
| | | | | A3.199 | Respond to individual patient health needs and issues as part of patient care<br>⍰ Identify the health needs of an individual patient<br>⍰ Adapt patient management according to particular determinants of health<br>⍰ Determine a patient's ability to access various services in the health and social systems | 17 | 1 | * | * | | * | |
| | | | | A3.200 | Demonstrate proficient and appropriate use of procedural skills in both diagnostic and therapeutic procedures relevant to orthopaedic surgery | 13 | 1 | * | * | | * | |
| | A4. Health Promotion & Illness Prevention | | | A4.1 | Understand the perioperative considerations for THA and TKA including blood conservation, deep vein thrombosis prophylaxis, and rehabilitation. | 33 | 1 | * | * | | * | |
| | | | | A4.2 | Use preventive and therapeutic interventions effectively | 13 | 1,2 | * | * | * | * | |
| | | | | A4.3 | Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions relevant to orthopaedic surgery | 13 | 1,2 | * | * | * | * | |
| | | | | A4.4 | Formulate an approach to prevention of thoroughly comprehend arthroplasty complications. | 34 | 1 | * | * | | * | |
| | | | | A4.5 | Determine the appropriate local anesthesia or conscious sedation for the safety of the patient during emergency room orthopaedic procedures. | 31 | 1 | * | * | | * | |
| | | | | A4.6 | Respond to individual patient health needs and issues as part of patient care<br>⍰ Identify determinants of health particular to an individual patient<br>⍰ Promote injury prevention with respect to recreational activities<br>⍰ Identify risk factors that can lead to nonunion, ulceration, amputation, Charcot joints, and malignancy, and advise patients on lifestyle modifications to improve outcomes | 17 | 1 | * | * | | * | |
| **B. Communicator** | | | | B1 | Communicate the status of postoperative patients, including:<br>⍰ Neurologic status<br>⍰ Wound status<br>⍰ Wound drainage | 40 | 2 | | | * | | |
| | | | | B2 | Present the case to the attending including detailed and appropriate injury-specific history, formulate a differential of pathology, order appropriate tests | 46 | 2 | | | * | | |
| | | | | B3 | Effectively communicate the orthopaedic needs of patients to consulting services. | 47 | 2 | | | * | | |
| | | | | B4 | Communicate the status of postoperative patients, including:<br>⍰ Neurologic status<br>⍰ Wound status<br>⍰ Wound drainage | 40 | 2 | | | * | | |
| | | | | B5 | Write a physical therapy prescription for the following related to the shoulder: rotator cuff tendinitis/tear/impingement, glenohumeral instability, adhesive capsulitis, rotator cuff repair, subacromial decompression, stabilization procedures, and the Mumford procedure. | 42 | 2 | | | * | | |
| | | | | B6 | Discuss functional prognosis with the patient and family with attention to their educational, social, and personal beliefs. | 32 | 2 | | | * | | |
| | | | | B7 | Provide adequate written and verbal communication to peers, allied health professionals, and consultants so that they may continue the plan of care in an effective manner when the resident is absent from the floor or service. | 32 | 2 | | | * | | |
| | | | | B8 | Respect the specific needs of his/her patients based on age, gender, race, and culture in formulating treatment plans. | 32 | 3 | | | * | | |
| | | | | B9 | Maintain comprehensive, timely, and legible medical records. | 32 | 2 | | | * | | |
| | | | | B10 | Develop rapport, trust, and ethical therapeutic relationships with patients and families<br>- Recognize that being a good communicator is a core clinical skill for physicians, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence, and improved clinical outcomes<br>- Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy<br>- Respect patient confidentiality, privacy, and autonomy<br>- Listen effectively<br>- Be aware and responsive to nonverbal cues<br>- Facilitate a structured clinical encounter effectively | 13 | 2 | | | * | | |
| | | | | B11 | Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals<br>⍰ Gather information about a disease, but also about a patient's beliefs, concerns, expectations, and illness experience<br>⍰ Recognize the emotional stress for patients and families faced with orthopaedic conditions and their associated surgical management, particularly in the treatment of children<br>⍰ Seek out and synthesize relevant information from other sources, such as a patient's family, caregivers, and other professionals | 14 | 2 | | | * | | |

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| | | | | B12 | Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals<br>▯ Deliver information to a patient and family, colleagues, and other professionals in a humane manner and in such a way that it is understandable and encourages discussion, and participation in decision-making<br>▯ Demonstrate effective, age-appropriate communication of treatment plans to pediatric patients<br>▯ Demonstrate cooperation and communication between health professionals involved in the care of individual patients such that consistent messages are delivered to patients and their families | 14 | 2,3 | | | * | | |
| | | | | B13 | Develop a common understanding on issues, problems, and plans with patients, families, and other professionals to develop a shared plan of care<br>▯ Identify and explore problems to be addressed from a patient encounter effectively, including the patient’s context, responses, concerns, and preferences<br>▯ Respect diversity and differences in decision-making<br>▯ Encourage discussion, questions, and interaction in the encounter | 14 | 2,3 | | | * | | |
| | | | | B14 | ▯ Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care<br>▯ Address challenging communication issues effectively, such as obtaining informed consent; delivering bad news; and addressing anger, confusion, and misunderstanding<br>▯ Obtain informed consent for surgical procedures, appreciating alternative means of achieving consent if the patient is unable to provide consent on the grounds of age, mental status, or other disqualifiers<br>▯ Discuss advanced directives and end-of-life issues with patients and families, such as “do not resuscitate” orders. | 15 | 2 | | | * | | |
| | | | | B15 | Document and disseminate information related to procedures performed and their outcomes | 13 | 2 | | | * | | |
| | | | | B16 | Ensure informed consent is obtained for procedures | 13 | 2 | | | * | | |
| | | | | B17 | Perform consultation effectively, including the presentation of well-documented assessments and recommendations in written and/or verbal form in response to a request from another health care professional | 12 | 2 | | | * | | |
| | | | | B18 | Use information technology to optimize learning. | 32 | 2 | | | * | | |
| | | | | B19 | Convey effective oral and written information about a medical encounter<br>▯ Maintain clear, concise, accurate, and appropriate records (written or electronic) of clinical encounters and plans<br>▯ Write well-organized and legible orders and progress notes<br>▯ Complete concise hospital discharge summaries promptly<br>▯ Write well-organized letters, providing clear directions where indicated<br>▯ Present verbal reports of clinical encounters and plans effectively | 15 | 2 | | | * | | |
| | | | | B20 | Function effectively as consultants, integrating all of the CanMEDS roles to provide optimal, ethical, and patient-centered medical and surgical care<br>- Demonstrate the ability to effectively and appropriately prioritize professional duties when faced with multiple patients and problems<br>- Demonstrate compassionate and patient-centered care<br>- Recognize and respond to the ethical dimensions in medical decision-making | 12 | 1,2,3 | * | * | * | * | |
| **C. Collaborator** | | | | C1 | Coordinate the care of patients with consulting services. | 47 | 2 | | | * | | |
| | | | | C2 | Demonstrate respectful collaboration with their peers and allied health staff. | 32 | 2 | | | * | | |
| | | | | C3 | Seek appropriate consultation from other health professionals, recognizing the limits of their expertise<br>- Demonstrate insight into their own limitations of expertise<br>- Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care | 13 | 2 | | | * | | |
| | | | | C4 | Seek appropriate consultation from other health professionals, recognizing the limits of their expertise<br>- Arrange appropriate follow-up care services for a patient and their family<br>- Demonstrate appropriate transfer of care of a patient to tertiary care where applicable | 13 | 2 | | | * | | |
| | | | | C5 | Participate effectively and appropriately in an interprofessional healthcare team<br>▯ Describe the specialist’s roles and responsibilities to other professionals<br>▯ Describe the roles and responsibilities of other professionals within the health care team<br>▯ Recognize and respect the diversity of roles, responsibilities and competences of other professionals in relation to their own<br>▯ Recognize the limitations of their professional competence<br>▯ Work with others to assess, plan, provide and integrate care for individual patients<br>▯ Work effectively as a team member when not in a team leadership role<br>▯ Work with others to assess, plan, provide and review other tasks, such as research problems, educational work, program review or administrative responsibilities<br>▯ Participate in morbidity and mortality reviews<br>▯ Participate effectively in interprofessional team meetings<br>▯ Enter into interdependent relationships with other professions for the provision of quality care<br>▯ Describe the principles of team dynamics<br>▯ Respect team ethics, including confidentiality, resource allocation and professionalism<br>▯ Demonstrate leadership in a healthcare team | 15 | 1,2 | * | * | * | | |
| | | | | C6 | Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict<br>▯ Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team | 15 | 2 | | | * | | |
| | | | | C7 | ▯ Work with other professionals to prevent conflicts<br>▯ Employ collaborative negotiation to resolve conflicts<br>▯ Respect differences and address misunderstandings and limitations in other professionals<br>▯ Recognize one’s own differences, misunderstanding and limitations that may contribute to interprofessional tension<br>▯ Reflect on interprofessional team function | 16 | 2,3 | | | * | | |
| **D. Leader** | | | Senior | D1 | Organize and make good judgments and quick decisions. | 33 | 3 | | | | | |
| | | | | D2 | Be responsible for the surgical management of the orthopaedic trauma patient when on call. | 48 | 3 | | | | | |
| | | | | D3 | Demonstrate the ability to coordinate the care of a musculoskeletal trauma service. | 48 | 2 | | | | | |
| | | | All | D4 | Demonstrate the ability to effectively manage the responsibilities of on-call duty, including supervision and instruction of the junior residents. | 31 | 2,3 | | | | | |
| | | | | D5 | Instruct and consult on the evaluation of emergency room patients and oversee the effective triage of patients with injuries or illnesses that are considered to be orthopaedic emergencies (i.e., acute or imminent septic disease, infections, open fractures, compartment syndrome, etc.). | 31 | 2 | | | | | |
| | | | | D6 | Understand the limits of his or her own knowledge and of the available facilities for managing orthopaedic patients, and arrange consultation with more experienced or specialized personnel and appropriate facilities as needed. | 31 | 3 | | | | | |
| | | | | D7 | Instruct and supervise the junior residents in pursuit of their goals and objectives. | 31 | 2,3 | | | | | |
| | | | | D8 | Instruct and supervise the junior residents in the appropriate techniques for general orthopaedic procedures. | 31 | 2,3 | | | | | |
| | | | | D9 | Analyze practice using quality improvement methods, and implement changes with the goal of practice improvement. | 32 | 1,2 | * | * | * | * | |
| | | | | D10 | Demonstrate an understanding of the cost/benefit of prescriptions and tests ordered. | 32 | 3 | | | | | |
| | | | | D11 | Justify continued length of stay in an acute care setting based on clinical findings and available benchmark data. | 32 | 1 | * | * | | * | |
| | | | | D12 | Act in a consultative role to other physicians and health professionals. | 32 | 2,3 | | | | | |
| | | | | D13 | Follow hospital guidelines when completing all discharge and operating room reports. | 32 | 3 | | | | | |
| | | | | D14 | Understand how the healthcare organization affects surgical practice. | 32 | 1 | * | * | | | |
| | | | | D15 | Follow the established practices, procedures, and policies of the department and affiliated hospitals. | 32 | 3 | | | | | |
| | | | | D16 | Function effectively as consultants, integrating all of the CanMEDS roles to provide optimal, ethical, and patient-centered medical and surgical care<br>-Identify and appropriately respond to relevant ethical issues arising in patient care | 12 | 1,2,3 | * | * | * | * | |
| | | | | D18 | Demonstrate the ability to effectively and appropriately prioritize professional duties when faced with multiple patients and problems<br>- Demonstrate compassionate and patient-centered care<br>- Recognize and respond to the ethical dimensions in medical decision-making | 12 | 3 | | | | | |
| | | | | D20 | Contribute to the enhancement of quality care and patient safety in orthopaedic surgery, integrating the available best evidence and best practices | 13 | 1,2 | * | * | | | |
| | | | | D21 | Seek appropriate consultation from other health professionals, recognizing the limits of their expertise<br>- Describe the limitations of practice in a community setting based on resources | 13 | 1 | * | * | | * | |
| | | | | D22 | Allocate finite healthcare resources appropriately<br>▯ Recognize the importance of just allocation of healthcare resources, balancing effectiveness, efficiency, and access with optimal patient care<br>▯ Apply evidence and management processes for cost-appropriate care | 16 | 1 | * | * | | * | |

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| | | | | D23 | Participate in activities that contribute to the effectiveness of their healthcare organizations and systems<br>▯ Work collaboratively with others in their organizations<br>▯ Participate in systematic quality process evaluation and improvement, such as patient safety initiatives<br>▯ Describe the structure and function of the healthcare system as it relates to orthopaedic surgery, including the roles of physicians<br>▯ Explain population-based approaches to healthcare services and their implication for medical practice | 16 | 1,2,3 | * | * | | * | |
| | | | | D24 | Manage their practice and career effectively<br>▯ Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life<br>▯ Manage patients' length of stay efficiently<br>▯ Manage surgical waiting lists efficiently<br>▯ Manage a practice including finances and human resources where applicable<br>▯ Explain the principles of practice management including independent practice, hospitalbased practice, or group practice<br>▯ Describe basic principles of providing/receiving references<br>▯ Demonstrate an ability to access and apply a broad base of information to the care of patients in hospitals and other healthcare settings<br>▯ Employ information technology appropriately for patient care | 16 | 1,2 | * | * | | * | |
| | | | | D25 | Serve in administration and leadership roles<br>▯ Chair or participate effectively in committees and meetings<br>▯ Lead or implement change in healthcare<br>▯ Plan relevant elements of healthcare delivery (e.g., work schedules) | 17 | 1,2 | | | | | |
| | | | | D26 | Maintain and enhance professional activities through ongoing learning<br>▯ Describe re-registration requirements for the Saudi Commission for Health Specialties<br>▯ Formulate relevant personal learning projects<br>▯ Recognize and reflect on learning issues in practice<br>▯ Pose an appropriate learning question<br>▯ Access and interpret the relevant evidence<br>▯ Integrate new learning into practice<br>▯ Recognize and correct deficits in knowledge and technical skills through targeted learning<br>▯ Evaluate the impact of any change in practice<br>▯ Document the learning process | 18 | 1,2 | | | | | |
| | | | | D27 | ▯ Assess the competence of junior learners working on the orthopaedic team<br>▯ Describe the principles of ethics with respect to teaching | 19 | 1,2 | * | * | * | * | |
| | | | | D28 | Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation<br>▯ Appreciate the professional, legal, and ethical codes of practice<br>▯ Fulfill the regulatory and legal obligations required of current practice<br>▯ Describe the medico-legal obligations associated with non-accidental trauma in children<br>▯ Demonstrate accountability to professional regulatory body<br>▯ Recognize and respond to others'' unprofessional behaviors in practice<br>▯ Participate in peer review | 19 | 1,2,3 | * | * | * | * | |
| | | | | D29 | Demonstrate a commitment to physician health and sustainable practice<br>▯ Balance personal and professional priorities to ensure personal health and a sustainable practice<br>▯ Strive to heighten personal and professional awareness and insight<br>▯ Recognize other professionals in need and respond appropriately | 20 | 3 | | | | | |
| **E. Health Advocate** | | | | E1 | Allocate finite healthcare resources appropriately<br>▯ Recognize the importance of just allocation of healthcare resources, balancing effectiveness, efficiency, and access with optimal patient care | 16 | 1 | | | | | |
| | | | | E2 | Respond to the health needs of the communities that they serve<br>▯ Identify opportunities for advocacy, health promotion, and disease prevention in the communities that they serve, and respond appropriately | 17 | 3 | | | | | |
| | | | | E3 | Identify the determinants of health for the populations that they serve<br>▯ Identify the psychological, social, and physical determinants of health for the populations that they serve, including barriers to access to care and resources<br>▯ Identify "at-risk" populations within a given orthopaedic practice in conjunction with orthopaedic surgery specialty societies and other associations<br>▯ Identify vulnerable or marginalized groups within the population served and respond appropriately<br>▯ Apply available knowledge regarding prevention to "at-risk" groups<br>▯ Contribute to the generation of population-based data for improved understanding of orthopaedic problems within "at-risk" populations | 17 | 1,2 | * | * | | * | |
| | | | | E4 | Promote the health of individual patients, communities, and populations<br>▯ Describe an approach to implementing a change in a determinant of health for the populations they serve | 17 | 1 | * | * | | * | |
| | | | | E5 | ▯ Explain the need to advocate to decrease the burden of illness (at a community or societal level) of a condition or problem relevant to orthopaedics through a relevant orthopaedic society, community-based advocacy group, other public education bodies, or private organizations<br>▯ Identify points of influence in the healthcare system and its structure<br>▯ Describe the role of the medical profession in advocating collectively for health and patient safety | 18 | 1 | * | * | | * | |
| **F. Scholar** | | | | F1 | Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems. | 32 | 1,2 | | | | | |
| | | | | F2 | Establish and maintain clinical knowledge, skills, and attitudes appropriate to orthopaedic surgery:<br>- Apply the lifelong learning skills of the Scholar Role to implement a personal program to stay up-to-date and enhance areas of professional competence | 13 | 1,2,3 | | | | | |
| | | | | F3 | Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others<br>▯ Describe principles of learning relevant to medical education<br>▯ Describe the principles of adult learning<br>▯ Discuss teaching models for patient and colleague education<br>▯ Identify collaboratively the learning needs and desired learning outcomes of others<br>▯ Select effective teaching strategies and content to facilitate others' learning<br>▯ Contribute to the creation, dissemination, application, and translation of new medical knowledge and practices<br>▯ Demonstrate an effective lecture or presentation<br>▯ Assess and reflect on a teaching encounter<br>▯ Provide effective feedback | 18 | 1,2 | | | | | |
| | | | | F4 | Contribute to the development, dissemination, and translation of new knowledge and practices<br>▯ Describe the principles of research and scholarly inquiry<br>▯ Describe the principles of research ethics<br>▯ Pose a scholarly question<br>▯ Conduct a systematic search for evidence<br>▯ Select and apply appropriate methods to address the question<br>▯ Disseminate the findings of a study | 19 | 1,2 | * | * | | * | |
| | | | | F5 | Evaluate medical information and its sources critically, and apply this appropriately to practice decisions<br>▯ Describe the principles of critical appraisal<br>▯ Critically appraise retrieved evidence in order to address a clinical question<br>▯ Integrate critical appraisal conclusions into clinical care | 18 | 1 | * | * | | | |
| **G. Professional** | | | | G1 | Be punctual for all clinical responsibilities. | 32 | 3 | | | | | |
| | | | | G2 | Function effectively as consultants, integrating all of the CanMEDS roles to provide optimal, ethical, and patient-centered medical and surgical care<br>- Demonstrate the ability to effectively and appropriately prioritize professional duties when faced with multiple patients and problems<br>- Demonstrate compassionate and patient-centered care<br>- Recognize and respond to the ethical dimensions in medical decision-making | 12 | 1,3 | * | * | * | * | |
| | | | | G3 | Demonstrate a commitment to their patients, profession, and society through ethical practice<br>▯ Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, and respect<br>▯ Demonstrate a commitment to delivering the highest-quality care and maintenance of competence<br>▯ Recognize and appropriately respond to ethical issues encountered in practice<br>▯ Pose an ethical question related to research and discuss the resolution of that question<br>▯ Explain the legal, ethical, and professional codes governing a physician's relationship with industry<br>▯ Manage conflicts of interest appropriately<br>▯ Recognize the principles and limits of patient confidentiality as defined by professional practice standards and governing bodies<br>▯ Maintain appropriate relations with patients | 19 | 2,3 | | | * | | |
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