

2025 Akita University Faculty of Medicine Syllabus

Category : 臨床医学Ⅱ
Course Title : Orthopedics - 整形外科 -
Eligible Students : grade 3 Related Course
Code : 71633007
Schedule : week 20 ~ week 24
Credits : 2

1. Lead Instructor

Naohisa Miyakoshi (Professor, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)

2. Instructors

Naohisa Miyakoshi (Professor, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Naoko Mori (Professor, Department of Radiology)
Michio Hongo (Professor, School of Health Science, Physical therapy)
Yuji Kasukawa (Associate Professor, Rehabilitation Medicine, 6148, Office Hour: 9 : 00-17 : 00)
Koji Nozaka (Associate Professor, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Hiroyuki Tsuchie (Lecturer, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Hiroyuki Nagasawa ((IGAKUBU) Lecturer, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Hidetomo Saito ((IGAKUBU) Lecturer, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Hiroaki Kijima ((IGAKUBU) Lecturer, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Tsuyoshi Shirahata (Assistant Professor, Advanced Emergency and Critical Care Center, 6148, Office Hour: 9 : 00-17 : 00)
Daisuke Kudo (Assistant Professor, Rehabilitation Medicine, 6148, Office Hour: 9 : 00-17 : 00)
Ryota Kimura (Assistant Professor, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Yuichi Ono (Assistant Professor, Department of Orthopedic Surgery, 6148, Office Hour: 9 : 00-17 : 00)
Yuji Hatakeyama (Part-time Lecturer, Omagari Welfare Medical Center)
Tadato Kido (Part-time Lecturer, Akita Rosai Hospital)
Akiko Misawa (Part-time Lecturer, Akita Prefectural Center on Development and Disability)
Moto Kobayashi (Part-time Lecturer, Hiraka General Hospital)

3. Course Description Outline(Course Objectives)

【Aim of class】

Understand the normal structure and function of the musculoskeletal system and learn the pathophysiology, causes, symptoms, diagnosis and treatment of major musculoskeletal diseases. Students will also learn related professionalism, ethics, medical behavioral science, medical safety, medical law (system), and EBM.

【Overview】

D-4-1 Structure and function

- Explain the structure and function of bones, cartilage, joints, and ligaments. (3-1)
- Explain the structure and function of the spine. (3-1)
- Explain limb skeleton, movement and innervation of major muscle groups. (3-1)
- Explain pelvic structure and gender differences. (3-1)
- Explain the mechanism of bone growth and bone formation/resorption. (3-1,3-2)
- Explain the muscle groups involved in posture and trunk movements. (3-1)
- Explain anti-gravity muscles. (3-1)

D-4-2 Fundamentals of diagnosis and testing

- Manual examination according to the pathology of the musculoskeletal system (examination of range of motion of limbs and spine, neurological examination can be explained). (3-3,4-2)
- Outline indications for musculoskeletal imaging (X-ray imaging, computed tomography (CT), magnetic resonance imaging (MRI), ultrasonography, bone mineral determination). (3-3,5-3)

D-4-3 Symptoms

- Motor paralysis/muscle weakness (3-2,4-2)
- Joint pain/swelling (3-2,4-2)
- Lower back pain (3-2,4-2)

D-4-4(1) Common diseases of the locomotor system

- Explain the diagnosis and initial treatment of limb/spinal trauma. (3-3,4-2,4-3,4-6)
- Explain the definition, severity classification, diagnosis and treatment of joint dislocations and ligament injuries. (3-2,3-3,4-2,4-3,4-6)
- Explain the pathology, symptoms, diagnosis and treatment of compartment syndrome. (3-2,3-3,3-5,4-2,4-3,4-6)
- Explain the etiology and pathophysiology of osteoporosis and list the most common fracture sites. (3-2 ~ 3-4,3-7,4-2 ~ 4-4,4-8)
- Explain the pathology, diagnosis and treatment of arthritis and tenosynovitis. (3-2,3-3,4-1 ~ 4-3,4-6)
- Explain the symptoms, diagnosis and treatment of osteoarthritis. (3-2,3-3,4-2,4-3,4-6)
- List constricted peripheral neuropathy (carpal tunnel syndrome, cubital tunnel syndrome, etc.) and explain its symptoms. (3-2,3-3,4-2,4-3)
- Explain neurological symptoms of cervical spondylotic myelopathy (including spinal ligament ossification) and cervical spondylotic radiculopathy. (3-1 ~ 3-3,4-1 ~ 4-3)
- Explain the diagnosis and treatment of spinal cord injury. (3-1 ~ 3-7,4-1 ~ 4-4)
- Explain symptoms, diagnosis and treatment of lumbar disc herniation. (3-2 ~ 3-4,4-1 ~ 4-3)
- Explain the pathology, symptoms, diagnosis and treatment of lumbar spinal canal stenosis. (3-2 ~ 3-4,4-1 ~ 4-3)
- Explain symptoms, diagnosis, and treatment of lumbar spondylolisthesis/spondylolysis. (3-2 ~ 3-4,4-1 ~ 4-3)
- Explain the pathology, diagnosis, and treatment of chronic locomotory pain (lower back pain, neck pain, stiff shoulders). (3-2 ~ 3-4,4-1 ~ 4-4)
- Explain outline rehabilitation for locomotory diseases. (3-3,3-4,4-3,4-4)

D-4-4(2) Infectious disease

- Explain the symptoms, diagnosis and treatment of septic arthritis. (3-2,3-3,4-1 ~ 4-3,4-6)
- Explain the symptoms, diagnosis, and treatment of intervertebral discitis, suppurative spondylitis, and spinal caries. (3-2,3-3,4-1 ~ 4-3,4-6)

D-4-4(3) Neoplastic disease

- Explain clinical findings, imaging findings, pathological findings, and initial treatment of primary bone tumors (osteosarcoma, Ewing sarcoma). (3-2 ~ 3-4, 3-7,4-2 ~ 4-4,4-7)
- Explain clinical, imaging, and laboratory findings of metastatic bone tumor. (3-2 ~ 3-4,4-1 ~ 4-4)
- Outline diagnosis, pathological findings, and treatment of malignant soft tissue tumor (liposarcoma). (3-3,3-4,4-1 ~ 4-4)

Explain related professionalism, ethics, medical behavioral science, medical safety, medical law (system), EBM. (1-1,1-2,2-1 ~ 2-8,3-6,4-8,5-1 ~ 5.5,6-1,6-2)

4. Textbook/Reference Books

Igaku Shoin: Standard Orthopedic Surgery 14th Edition

5. **Assessment**

Formative examination, attendance

A score of 60% or higher is considered a pass for the formation test.

If students do not attend more than two-thirds of the lectures, they will not be eligible to take the 3rd year standardized examination.

6. **Out of Class Study/Message**

Please cooperate as the classrooms used may change for actual lessons.

Read the designated textbooks and reference books before taking classes.

After class, review while looking at the handouts.

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
1	9 / 22 (Mon)	1-2	Lecture	Theme: Orthopedic general theory Understand the field of orthopedic surgery and be able to explain its items. D-4-1 Structure and function D-4-2 Fundamentals of diagnosis and testing D-4-3 Symptoms D-4-4 Disease	Naohisa Miyakoshi	医学系研究棟 4 階 6 講義室
2	9 / 22 (Mon)	3-4	Lecture	Theme: Spine examination Explain the method and interpretation of spinal examination. D-4-1 Explain the structure and function of the spinal column. D-4-1 Explain outline the muscle groups involved in posture and trunk movement. D-4-2 Explain the manual examination according to the pathology of the musculoskeletal system. D-4-3 Motor paralysis/muscle weakness	Yuichi Ono	医学系研究棟 4 階 6 講義室
3	9 / 22 (Mon)	5-6	Lecture	Theme: Extremity examination method Explain the movement and innervation of the major muscle groups of the extremities. D-4-1 Explain limb skeleton, movement and innervation of major muscle groups. D-4-1 Explain antigravity muscles. D-4-2 Explain the manual examination according to the pathology of the musculoskeletal system. D-4-3 Joint pain/swelling. D-4-4-(1) Explain the diagnosis and initial treatment of extremity trauma.	Hidetomo Saito	医学系研究棟 4 階 6 講義室
4	9 / 22 (Mon)	7-8	Lecture	Theme: Osteoarthritis Explain osteoarthritis and explain symptoms and treatment. D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments. D-4-2 Explain the manual examination according to the pathology of the musculoskeletal system. D-4-2 Outline indications for musculoskeletal imaging. D-4-3 Joint pain/swelling D-4-4-(1) Explain the symptoms, diagnosis and treatment of osteoarthritis. D-4-4-(1) Explain the pathophysiology, diagnosis, and treatment of chronic locomotory pain.	Hiroaki Kijima	医学系研究棟 4 階 6 講義室
5	9 / 22 (Mon)	9-10	Lecture	Theme: Bone system disease Outline the etiology, diagnosis, and treatment of typical bone system diseases. D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments. D-4-1 Explain the mechanism of bone growth and bone formation/resorption. E-7-3 List the major abnormalities involved in growth.	Hiroyuki Tsuchie	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
6	9 / 29 (Mon)	1-2	Lecture	<p>Theme: Lower extremity/fracture</p> <p>1) List osteoarthritis and explain symptoms and treatment.</p> <p>2) Explain the causes and treatment of arthritis.</p> <p>3) Explain outline lower extremity compartment syndrome.</p> <p>D-4-3 Joint pain/swelling</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of extremity trauma.</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocations and ligamentous injuries.</p> <p>D-4-4-(1) Explain the classification, symptoms, diagnosis, treatment and complications of fractures.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(1) Explain the pathophysiology, symptoms, diagnosis, and treatment of compartment syndrome.</p> <p>D-4-4-(1) Explain the symptoms, diagnosis and treatment of osteoarthritis.</p> <p>D-4-4-(2) Explain the symptoms, diagnosis, and treatment of septic arthritis.</p>	Koji Nozaka	医学系研究棟 4 階 6 講義室
7	9 / 29 (Mon)	3-4	Lecture	<p>Theme: Knee joint</p> <p>1) Explain the structure and function of bones, cartilage, joints, and ligaments of the knee joint.</p> <p>2) Explain the movements and roles of the major muscle groups of the knee joint.</p> <p>3) Explain the range of motion of the knee joint and how to take physical findings.</p> <p>4) Explain the pathophysiology of knee joint diseases.</p> <p>5) Explain the pathophysiology, symptoms, and treatment of knee osteoarthritis.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-1 Explain limb skeleton, movement and innervation of major muscle groups.</p> <p>D-4-2 Explain the manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-3 Joint pain/swelling</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocations and ligamentous injuries.</p> <p>D-4-4-(1) Explain the classification, symptoms, diagnosis, treatment and complications of fractures.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(1) Explain the symptoms, diagnosis and treatment of osteoarthritis.</p> <p>D-4-4-(2) Explain the symptoms, diagnosis, and treatment of septic arthritis.</p>	Hidetomo Saito	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
8	9 / 29 (Mon)	5-6	Lecture	<p>Theme: Rheumatoid arthritis</p> <p>1) Among the many diseases that cause arthritis, the differences in rheumatoid arthritis can be explained.</p> <p>2) Understand joint damage caused by persistent arthritis.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Joint pain/swelling</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>E-4-3-(2) Explain the pathophysiology, symptoms, diagnosis, treatment and rehabilitation of rheumatoid arthritis.</p> <p>E-4-3-(2) Explain the extra-articular manifestations of rheumatoid arthritis.</p>	Moto Kobayashi	医学系研究棟 4 階 6 講義室
9	9 / 29 (Mon)	7-8	Lecture	<p>Theme: Ankle joint</p> <p>1) Explain the structure and function of ankle bones, cartilage, joints, and ligaments.</p> <p>2) Explain the movements and roles of the major muscle groups of the ankle joint.</p> <p>3) Explain how to take ankle joint range of motion and physical findings.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-1 Explain limb skeleton, movement and innervation of major muscle groups.</p> <p>D-4-1 Explain antigravity muscles.</p> <p>D-4-2 Explain the manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-3 Joint pain/swelling</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocations and ligamentous injuries.</p> <p>D-4-4-(1) Explain the classification, symptoms, diagnosis, treatment and complications of fractures.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(1) Explain the symptoms, diagnosis and treatment of osteoarthritis.</p> <p>D-4-4-(2) Explain the symptoms, diagnosis, and treatment of septic arthritis.</p>	Koji Nozaka	医学系研究棟 4 階 6 講義室
10	9 / 29 (Mon)	9-10	Lecture	<p>Theme: Bone metabolism</p> <p>Understand bone metabolism and explain the difference between osteoporosis and rickets/osteomalacia.</p> <p>D-4-1 Explain the mechanism of bone growth and bone formation/resorption.</p> <p>D-12-1 Explain the actions and secretion regulation mechanisms of hormones secreted from the parathyroid gland (parathyroid gland).</p> <p>D-12-4-(3) Abnormalities in calcium metabolism can be explained in relation to diseases.</p> <p>D-12-4-(3) Explain the etiology, pathophysiology, signs and symptoms, and diagnosis of hyperparathyroidism and hypoparathyroidism.</p> <p>D-12-4-(3) Outline pseudohypoparathyroidism.</p>	Naohisa Miyakoshi	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
11	9 / 30 (Tue)	1-2	Lecture	<p>Theme: Fracture/dislocation overview, upper extremity disease</p> <p>1) Explain the classification of fractures and the complications of fractures.</p> <p>2) Understand the anatomy from the humerus to the scaphoid, and explain the characteristics and treatment methods of fractures.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of extremity trauma.</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocations and ligamentous injuries.</p> <p>D-4-4-(1) Explain the classification, symptoms, diagnosis, treatment and complications of fractures.</p> <p>D-4-4-(1) Explain the pathophysiology, symptoms, diagnosis, and treatment of compartment syndrome.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(1) List the peripheral neuropathies with entrapment and explain their symptoms</p>	Tsuyoshi Shirahata	医学系研究棟 4 階 6 講義室
12	9 / 30 (Tue)	3-4	Lecture	<p>Theme: Peripheral nerve</p> <p>1) Explain the classification and diagnostic methods of peripheral nerve injury.</p> <p>2) Explain the diagnosis and treatment of radial nerve injury, median nerve injury, ulnar nerve injury, and brachial plexus injury.</p> <p>D-2-1-(2) Outline the composition of nerve plexuses, main nerves innervating skeletal muscles, and skin distribution.</p> <p>D-2-4-(5) Outline major neuropathic pain.</p> <p>D-4-2 Explain manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-4-(1) List constricted peripheral neuropathy (carpal tunnel syndrome, cubital tunnel syndrome, etc.) and explain its symptoms.</p>	Tsuyoshi Shirahata	医学系研究棟 4 階 6 講義室
13	9 / 30 (Tue)	5-6	Lecture	<p>Theme: Imaging diagnosis of locomotory diseases</p> <p>D-4-2 Explain outline indications for musculoskeletal imaging (X-ray imaging, computed tomography (CT), magnetic resonance imaging (MRI), ultrasonography, and bone mineral determination).</p>	Naoko Mori	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
14	9 / 30 (Tue)	7-8	Lecture	<p>Theme: Benign bone tumors/bone tumor-like diseases</p> <p>1) Explain the most common site, age of most frequent onset, and treatment of benign bone tumors.</p> <p>2) Explain the pathophysiology of typical bone tumor-like diseases.</p> <p>D-4-1 Explain the structure and function of bone and cartilage.</p> <p>D-4-1 Explain bone growth.</p> <p>D-4-2 Explain outline indications for musculoskeletal imaging.</p> <p>D-4-4-(3) Explain clinical findings, imaging findings, pathological findings, and initial treatment of primary bone tumors.</p>	Hiroyuki Nagasawa	医学系研究棟 4 階 6 講義室
15	9 / 30 (Tue)	9-10	Lecture	<p>Theme: Malignant bone tumor</p> <p>Explain outline the epidemiology, pathological findings, and treatment of primary malignant bone tumors.</p> <p>C-4-6 Explain outline tumor classification, degree of differentiation, grade, and stage.</p> <p>D-4-2 Explain outline indications for musculoskeletal imaging.</p> <p>D-4-4-(3) Explain clinical findings, imaging findings, pathological findings, and initial treatment of primary bone tumors.</p>	Hiroyuki Tsuchie	医学系研究棟 4 階 6 講義室
16	10 / 6 (Mon)	1-2	Lecture	<p>Theme: Pediatric hip disease</p> <p>List typical pediatric hip joint diseases and explain symptoms and treatments.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-1 Explain pelvic structure and gender differences.</p> <p>D-4-1 Explain the mechanism of bone growth and bone formation/resorption.</p> <p>D-4-2 Explain the manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-3 Joint pain/swelling</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocations and ligamentous injuries.</p> <p>D-4-4-(1) Explain the classification, symptoms, diagnosis, treatment and complications of fractures.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(2) Explain the symptoms, diagnosis, and treatment of septic arthritis</p>	Hiroaki Kijima	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
17	10 / 6 (Mon)	3-4	Lecture	<p>Theme: Adult hip disease</p> <p>List typical adult hip joint diseases and explain symptoms and treatments.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-1 Explain limb skeleton, movement and innervation of major muscle groups.</p> <p>D-4-1 Explain pelvic structure and gender differences.</p> <p>D-4-1 Explain the muscle groups involved in posture and trunk movement.</p> <p>D-4-2 Explain the manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-3 Joint pain/swelling</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocations and ligamentous injuries.</p> <p>D-4-4-(1) Explain the classification, symptoms, diagnosis, treatment and complications of fractures.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(1) Explain the symptoms, diagnosis and treatment of osteoarthritis.</p> <p>D-4-4-(2) Explain the symptoms, diagnosis, and treatment of septic arthritis.</p>	Hiroaki Kijima	医学系研究棟 4 階 6 講義室
18	10 / 6 (Mon)	5-6	Lecture	<p>Theme: Hand</p> <p>Understand the structure of the fingers and explain the anesthesia method and surgical treatment for finger injuries.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of limb injuries.</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocation and ligament injury.</p> <p>D-4-4-(1) Explain classification, signs and symptoms, diagnosis, treatment, and complications of bone fractures.</p> <p>D-4-4-(1) Explain pathophysiology, signs and symptoms, diagnosis, and treatment of compartment syndrome.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(1) Explain signs and symptoms, diagnosis, and treatment of osteoarthritis.</p> <p>D-4-4-(1) List entrapment peripheral neuropathy and explain its symptoms.</p>	Tsuyoshi Shirahata	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
19	10 / 6 (Mon)	7-8	Lecture	<p>Theme: Shoulder joint</p> <p>Understand the anatomy of the shoulder joint and diagnose typical diseases.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-2 Explain manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Joint pain/joint swelling</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of limb injuries.</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocation and ligament injury.</p> <p>D-4-4-(1) Explain classification, signs and symptoms, diagnosis, treatment, and complications of bone fractures.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(2) Explain symptoms, diagnosis, and treatment of pyogenic arthritis.</p>	Yuji Hatakeyama	医学系研究棟 4 階 6 講義室
20	10 / 6 (Mon)	9-10	Lecture	<p>Theme: Lumbar spine</p> <p>Understand the structure of the lumbar spine and describe the major degenerative diseases and injuries of the lumbar spine.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>D-4-1 Outline the muscle groups involved in posture and trunk movement.</p> <p>D-4-2 Explain manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Lumbar back pain</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of spinal trauma.</p> <p>D-4-4-(1) Explain signs and symptoms, diagnosis, and treatment of lumbar disc herniation.</p> <p>D-4-4-(1) Explain pathophysiology, signs and symptoms, diagnosis, and treatment of lumbar spinal canal stenosis.</p> <p>D-4-4-(1) Explain the symptoms, diagnosis, and treatment of lumbar separation/spondylolisthesis.</p> <p>D-4-4-(1) Explain pathophysiology, diagnosis, and treatment of chronic musculoskeletal pain.</p>	Daisuke Kudo	医学系研究棟 4 階 6 講義室
21	10 / 7 (Tue)	1-2	Lecture	<p>Theme: Spinal cord tumor</p> <p>1) Explain typical spinal cord tumors.</p> <p>2) Explain the diagnosis of spinal cord tumor.</p> <p>D-2-4-(10) Explain the classification and common sites of major spinal cord tumors, and outline the pathophysiology.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-3 Lumbar back pain</p>	Yuji Kasukawa	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
22	10 / 7 (Tue)	3-4	Lecture	<p>Theme: Thoracic spine</p> <p>List thoracic spine diseases and explain their diagnosis and treatment.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>D-4-1 Outline the muscle groups involved in posture and trunk movement.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of spinal trauma.</p> <p>D-4-4-(1) Explain pathophysiology, diagnosis, and treatment of chronic musculoskeletal pain.</p> <p>D-4-4-(1) Outline rehabilitation for musculoskeletal diseases.</p>	Yuichi Ono	医学系研究棟 4 階 6 講義室
23	10 / 7 (Tue)	5-6	Lecture	<p>Theme: Cervical spine</p> <p>Understand the structure of the cervical spine and describe the major degenerative diseases and injuries of the cervical spine.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>D-4-1 Explain the structure of the head and neck.</p> <p>D-4-2 Explain manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of spinal trauma.</p> <p>D-4-4-(1) Explain the neurological symptoms of cervical spondylotic myelopathy (including spinal ligament ossification) and cervical spondylotic radiculopathy.</p> <p>D-4-4-(1) Explain pathophysiology, diagnosis, and treatment of chronic musculoskeletal pain.</p> <p>D-4-4-(1) Outline rehabilitation for musculoskeletal diseases.</p>	Naohisa Miyakoshi	医学系研究棟 4 階 6 講義室
24	10 / 7 (Tue)	7-8	Lecture	<p>Theme: Spinal infection</p> <p>Understand the pathogenesis of spinal infections and explain the difference between pyogenic spondylitis and tuberculous spondylitis.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-3 Lumbar back pain</p> <p>D-4-4-(2) Explain the symptoms, diagnosis, and treatment of intervertebral discitis, suppurative spondylitis, and spinal caries.</p>	Naohisa Miyakoshi	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
25	10 / 7 (Tue)	9-10	Lecture	<p>Theme: Spinal deformity</p> <p>Explain the pathology and treatment of spinal deformities in children and adults.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>D-4-1 Outline the muscle groups involved in posture and trunk movement.</p> <p>D-4-2 Explain manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Lumbar back pain</p> <p>D-4-4-(1) Outline rehabilitation for musculoskeletal diseases.</p>	Michio Hongo	医学系研究棟 4 階 6 講義室
26	10 / 14 (Tue)	1-2	Self learning	Theme: independent learning		医学系研究棟 4 階 6 講義室
27	10 / 14 (Tue)	3-4	Lecture	<p>Theme: Nursing and Orthopedic Surgery</p> <p>Understand the role of orthopedic surgery in medical care for children with disabilities, and be able to explain the concept of rehabilitation.</p> <p>B-1-8 Explain the current situation and system of welfare for persons with disabilities.</p> <p>D-4-1 Explain the skeleton of limbs, movement and innervation of major muscle groups.</p> <p>D-4-1 Outline the muscle groups involved in posture and trunk movement.</p> <p>D-4-1 Explain antigravity muscles.</p> <p>D-4-4-(1) Outline rehabilitation for musculoskeletal diseases.</p>	Akiko Misawa	医学系研究棟 4 階 6 講義室
28	10 / 14 (Tue)	5-6	Lecture	<p>Theme: Spinal trauma</p> <p>1) Understand the anatomy and function of the spinal column and spinal cord.</p> <p>2) Understand the basic concepts regarding the classification, treatment, and prognosis of spine/spinal cord trauma.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>D-4-1 Outline the muscle groups involved in posture and trunk movement.</p> <p>D-4-2 Explain manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of spinal trauma.</p> <p>D-4-4-(1) Explain classification, signs and symptoms, diagnosis, treatment, and complications of bone fractures.</p> <p>D-4-4-(1) Explain the diagnosis and treatment of spinal cord injury.</p> <p>D-4-4-(1) Outline rehabilitation for musculoskeletal diseases.</p>	Tadato Kido	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
29	10 / 14 (Tue)	7-8	Lecture	<p>Theme: Metastatic bone tumor/soft tissue tumor</p> <p>1) Explain the mechanism of bone metastasis.</p> <p>2) Outline orthopedic treatment for metastatic bone tumor.</p> <p>3) Outline imaging findings and treatment methods for typical soft tissue tumors.</p> <p>C-4-6 Explain cancer metastasis.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-4-(3) Explain clinical, imaging, and laboratory findings of metastatic bone tumors.</p> <p>D-4-4-(3) Outline the diagnosis, pathological findings, and treatment of malignant soft tissue tumors.</p>	Hiroyuki Nagasawa	医学系研究棟 4 階 6 講義室
30	10 / 14 (Tue)	9-10	Lecture	<p>Theme: Metastatic spinal tumor</p> <p>1) Explain the common sites of metastatic spinal tumors.</p> <p>2) Explain the primary tumor that frequently causes metastatic spinal tumors.</p> <p>3) Explain the diagnosis and treatment of metastatic spine tumors.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>C-4-6 Explain cancer metastasis.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-4-(3) Explain clinical, imaging, and laboratory findings of metastatic bone tumors</p>	Ryota Kimura	医学系研究棟 4 階 6 講義室
31	10 / 20 (Mon)	1-2	Lecture	<p>Theme: Idiopathic osteonecrosis</p> <p>List typical idiopathic osteonecrosis diseases and explain symptoms and treatment.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-4-(1) Explain signs and symptoms, diagnosis, and treatment of osteoarthritis.</p>	Hiroaki Kijima	医学系研究棟 4 階 6 講義室
32	10 / 20 (Mon)	3-4	Lecture	<p>Theme: Arthroscopic surgery</p> <p>1) Explain Japan's contribution to the development of arthroscopy.</p> <p>2) Explain the bone, cartilage, meniscus, labrum, joint capsule, ligaments and their functions in arthroscopy.</p> <p>3) Explain arthroscopic surgery.</p> <p>D-4-1 Explain the structure and function of bones, cartilage, joints, and ligaments.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-4-(1) Explain the definition, severity classification, diagnosis and treatment of joint dislocation and ligament injury.</p> <p>D-4-4-(1) Explain the pathology, diagnosis, and treatment of arthritis and tenosynovitis.</p> <p>D-4-4-(2) Explain symptoms, diagnosis, and treatment of pyogenic arthritis.</p>	Hidetomo Saito	医学系研究棟 4 階 6 講義室

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
33	10 / 20 (Mon)	5-6	Lecture	<p>Theme: Spine surgery therapy</p> <p>Explain the indications and complications of surgical therapy for various spinal diseases.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>D-4-1 Outline the muscle groups involved in posture and trunk movement.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-3 Lumbar back pain</p> <p>D-4-4-(1) Explain signs and symptoms, diagnosis, and treatment of lumbar disc herniation.</p> <p>D-4-4-(1) Explain pathophysiology, signs and symptoms, diagnosis, and treatment of lumbar spinal canal stenosis.</p> <p>D-4-4-(1) Explain the symptoms, diagnosis, and treatment of lumbar separation/spondylolisthesis.</p>	Ryota Kimura	医学系研究棟 4 階 6 講義室
34	10 / 20 (Mon)	7-8	Lecture	<p>Theme: Spinal cord injury</p> <p>1) Understand the anatomical functions of the spinal column and spinal cord.</p> <p>2) To understand the basic concepts regarding the pathology, treatment, and prognosis of spinal cord injury.</p> <p>3) Explain rehabilitation for spinal cord injury.</p> <p>D-4-1 Explain the structure and function of the spinal column.</p> <p>D-4-1 Outline the muscle groups involved in posture and trunk movement.</p> <p>D-4-2 Explain manual examination according to the pathology of the musculoskeletal system.</p> <p>D-4-2 Outline indications for musculoskeletal imaging.</p> <p>D-4-3 Motor paralysis/muscle weakness</p> <p>D-4-4-(1) Explain the diagnosis and initial treatment of spinal trauma.</p> <p>D-4-4-(1) Explain the diagnosis and treatment of spinal cord injury.</p> <p>D-4-4-(1) Outline rehabilitation for musculoskeletal diseases.</p>	Daisuke Kudo	医学系研究棟 4 階 6 講義室
35	10 / 20 (Mon)	9-10	Examination	Theme: Examination		医学系研究棟 4 階 6 講義室