2025 Akita University Faculty of Medicine Syllabus

Category ： 基礎医学 II
Course Title ： Essentials of Anatomy and Osteology
Eligible Students ： grade 1 Related Course
Code ： 71563005
Schedule ： week 2 〜 week 14
Credits ： 0.5+0.5

1. **Lead Instructor**

Yoshio Bando (Professor, Dept. of Anatomy, 6053, Office Hour: 随時（要アポイントメント）)

2. **Instructors**

Yoshio Bando (Professor, Dept. of Anatomy, 6053, Office Hour: 随時（要アポイントメント）)
Ryoji Suzuki (Associate Professor, Dept. of Anatomy, 6054, Office Hour: 随時（要アポイントメント）)
Hideo Akashi (Assistant Professor, Dept. of Anatomy, 6055, Office Hour: 随時（要アポイントメント）)
Masahiko Watanabe (Part-time Lecturer, Professor, Hokkaido Univ. Grad. Sch. Med.)
Shigetaka Yoshida (Part-time Lecturer, Professor, Asahikawa Med. Univ.)
Shinya Ugawa (Part-time Lecturer, Professor, Nagoya City Univ. Grad. Sch. Med.)

3. **Course Description Outline(Course Objectives)**

Aim

In order to learn the pathophysiology of each disease required in medical treatment you are going to understand the basic structures of the major organs and tissues. This course is an introduction to anatomy. In osteology and osteology training course, you are going to understand the bone structures and tissues which support them. In addition, you will study the related professionalism, medical ethics, medical behavioral science, medical safety, medical law (system), EBM.

Overview

1) Gain expertise in the medical sciences to which anatomy relates.(GE-01-01-01, GE-03-03, GE-03-05-01, GE-03-05-03〜04, RE-01-01,
RE-02-01, RE-03-01〜03, PS-01-02-01〜05, PS-01-02-9〜21, PS-01-02-23〜26, PS-01-04-05, PS-01-04-13〜15, PS-02-01, PS-02-(02〜11, 13, 15〜17)-01, PS-02-(02〜11, 13〜17)-05)
2) Have a sense of respect for the deceased and the bereaved family, and be able to take an appropriate attitude toward the practical training.(PR-01〜03, PR-04-01,GE-01-01-01, GE-01-02-02, GE-03-06-01〜02, LL-01-01, LL-01-02-02, LL-02, RE-01-01, RE-02-01, RE-03-01, IT-01-01-02, IT-01-02, CM-01-01, CM-01-02, CM-02-01, CM-03-02-01, S0-06-01-03)
3) Be fully aware of the physician’s responsibilities.(PR-01〜04, LL-01〜02, RE-01-01, RE-02-01, RE-03-01, IT-01-01-02, IT-01-02-01〜02, IT-03-02, IP-01-02, IP-02-01〜04, S-05-01-01, S0-06-01-03)
4) Understand their roles in the practical training, build friendly relationships with team members, and cooperate with them in the practical training.(PR-01〜03,PR-04-01-01, GE-01-04-01, GE-01-04-04, GE-01-04-06, LL-01-01, LL-02-01, RE-01-01, RE-02-01, RE-03-01, RE-04-01-02〜3, CS-03-06, CM-01-01, CM-02-01, S0-06-01-03)
5) Listen carefully to others and understand their problems.(PR-01〜03, PR-04-01-01, GE-01-04-01, GE-01-04-04, GE-01-04-06, LL-01-01, LL-02-01, RE-01-01, RE-02-01, RE-03-01, RE-04-01-02〜3, CS-03-06, CM-01-01, CM-02-01, S0-06-01-03)
6) Able to explain the content clearly to the person to whom he/she is speaking.(PR-01〜03, PR-04-01-01, GE-01-04-01, GE-01-04-04, GE-01-
04-06, LL-01-01, LL-02-01, RE-01-01, RE-02-01, RE-03-01, RE-04-01-02〜3, CS-03-06, CM-01-01, CM-02-01, S0-06-01-03)
7) Understand, outline, and comply with laws related to osteology practice.(PR-01, RE-05-02-01）

8) The students will actively explore various problems and issues that arise in lectures and anatomy practice, and cultivate the ability to solve problems independently by practicing hybrid-type anatomy practice using a virtual anatomical table "Anatomage" and active learning utilizing ICT and other technologies. The students will develop the ability to solve problems by practicing hybrid-type anatomical practice using a virtual anatomical table anatomage and active learning utilizing ICT, etc.(PR-01～03, GE-01-01-01, LL-01-01, LL-02-01, RE-01-01, RE-02-01, RE-02-01, RE-03-01, IT-01-01-01～02, IT-01-02,IT-02-01, IT-03-02)

Reference

Medical expertise related to anatomy that should be acquired in the first year (specific examples).
1)Understand and explain the major organs that make up the human body and the parts and names of the organs.
2)Learn essential anatomical terms, understand medical expressions, and be able to express them correctly.
3)Understand the composition, functional differentiation and directional terms of tissues and organs as a group.
4)Understand the structure and function of blood, hematopoietic organs, and lymphatic system.
5)Understand the normal structure and function of the nervous system.
6)Understand the normal structure and function of the locomotor system.
7)Understand the structure and function of the cardiovascular system.
8)Understand the structure and function of the respiratory system.
9)Understand the normal structure and function of the digestive system.
10)Understand the structure and function of the renal and urinary tract system.
11)Understand the structure and function of the reproductive system.
12)Understand the structure and function of the ears, nose, throat, and oral cavity.
13)Understand and explain the structure of bones.

4. **Textbook/Reference Books**

1. Introduction to Human Anatomy
There is no optimal textbook as an introductory edition, and lectures based on the textbook cannot always be given, but most part of the lectures are based on "Gray's Anatomy". This text book is also used for lectures of Anatomy at 2nd year student.
(Textbook)
Gray's Anatomy (Elsevier Japan)
(Reference book)
Anatomy Lecture (Nanzan-do)
Structure, function and materials of the human body (Nippon Medical Shinposha)

2. Osteology and osteology training
(Textbook)
Gray's Anatomy (Elsevier Japan)
Osteology Training Guide (Nanzan-do)
(Atlas)
An atlas will be used for osteology training and Gross Aanatomy practical training (2nd year). At least one atlas will be required. Any of the following atlases are fine.
Prometheus Anatomy Core Atlas (Igaku-Shoin)
Netter Anatomy Atlas (Elsevier Japan / Nankodo)
Gray's Anatomy Atlas (Elsevier Japan)

5. **Assessment**

Credit approval is evaluated by a unified examination "touitsu-shiken". However, it is assumed that the unified examination qualifications meet the following conditions.

1) Introduction to Human Anatomy and Osteology (lecture)

Each attendance (-3 points/times for tardiness and leaving early, and -5 points/times for absence without official notification ”kesseki todoke” from the score of the drawing examinations)

2) Osteology practice

(1) Attendance (-3 points/times for tardiness and leaving early, and -5 points/times for absence without official notification from the score of the drawing examinations), (2) sketching subjects, and (3) drawing exam will be evaluated comprehensively.
Attendance will be checked during the practical training, but attendance will be counted by submitting sketches.
The overall evaluation of the sketches will be passed if the average of the four sketching assignments is 60 points or more.
However, in the case of a situation in which the student's understanding of the assignment is deemed to be too poor, the assessment may be switched to an oral examination by the instructor for each group instead of the sketches for the assignment. Note that make-up classes cannot be held during other periods due to the availability of the room. If a student misses the class, he/she will receive a zero point for that class. Students must take care of their physical condition.

The drawing examination is not formative, so a score of 60% or higher is required (If the score is less than 30%, the applicant does not satisfy the “ completion of the prescribed practical training, ” even if other criteria are exceeded.).

(1) Attendance (2/3 or more for all lectures and practices) and (2) overall evaluation of sketches and (3) drawing test must both score 60% or more. The student is considered to have “ completed the prescribed practical training ” and is eligible to take the unified examination. If either the overall evaluation of the sketches or the drawing test is less than 60%, the student's attendance is considered to be less than 2/3 of the class or his/her class attitude is considered to be extremely poor.
If the student's attendance is less than 2/3 of the class, or if the student's class attitude is extremely poor, the student will be qualified to take the unified examination (Note that this does not apply to students who score less than 30% on the drawing exam.).

Separate consideration will be given to students who are late, leave early, or are absent due to objectively unavoidable circumstances such as long-term hospitalization.

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

In the osteology training, the following items should be prepared in advance for sketching.

1)A4 Several sheets of Kent paper (osteology training) 1 Average per time 1-2 About a sheet)
2)Pencils (colored pencils if necessary)
3)Kneaded eraser

The syllabus schedule is just a plan and may differ from the actual progress, such as changes due to progress or schedule adjustment of part-time instructors. Therefore, be careful.

The exam will be held on 13th, December. But it may overlap with the other examination. Since the content covered in this lecture and practical training is wide-ranging, I recommend that you review and study well on a regular basis.

Topics and Contents of class, Course Objectives						
	Class Date	**Period**	**Class Format**	**Topics and Contents of class, Course Objectives**	**Instructors**	**Class Room**
1	9 / 29 (Mon)	5-6	Lecture	Theme: Osteology Lecture 1 Spine and Thorax (1) Explain the basic structure of the spine and thorax. (2) Explain the connections between vertebrae and the structure of the spinal column.	Yoshio Bando	基礎棟第 1 講義室
2	9 / 29 (Mon)	7-10	Practice	Theme: Osteology training 1 Spine and thorax Observe and sketch the spine and thorax. (1) Explain the basic structure of the vertebrae and the composition of the spinal column and thorax. (2) Explain the differences in vertebrae features. (3) Explain the name and function of the vertebrae. (4) Outline the muscle groups involved in posture and trunk movement. (5) Explain the connection between bones.	Yoshio Bando Ryoji Suzuki Hideo Akashi	第 2 実習室
3	10 / 6 (Mon)	5-6	Lecture	Theme: Osteology Lecture 2 Upper limb band and free upper limb Explain the basic structure of the upper limb band and free upper limb.	Hideo Akashi	基礎棟第 1 講義室
4	10 / 6 (Mon)	7-10	Practice	Theme: Osteology training 2 Upper limb band and free upper limb Observe and sketch the upper limb band and free upper limb. (1) Explain the structure of the joints of the upper limbs. (2) Explain the relationship between the bones of the upper limbs and the major muscles. (3) Explain the name and function of the bones of the upper limbs.	Yoshio Bando Ryoji Suzuki Hideo Akashi	第 2 実習室
5	10 / 20 (Mon)	7-8	Lecture	Theme: Osteology Lecture 3 Pelvis and free lower limbs Explain the basic structure of the pelvis and free lower limbs.	Ryoji Suzuki	基礎棟第 1 講義室
6	10 / 20 (Mon)	7-10	Practice	Theme: Osteology training 3 Pelvis and free lower limbs Observe and sketch the pelvis/pelvic girdle and free lower limbs. (1) Explain the structure and gender of the pelvis. (2) Explain the holes in the pelvis and what goes in and out. (3) Explain the structure of the joints of the lower limbs. (4) Explain the relationship between the bones of the lower limbs and the major muscles. (5) Explain the name and function of the bones of the lower limbs.	Yoshio Bando Ryoji Suzuki Hideo Akashi	第 2 実習室
7	10 / 27 (Mon)	5-6	Lecture	Theme: Osteology Lecture 4 skull (1) Explain the basic structure of the skull and face. (2) Explain the bones and holes and what goes in and out in the internal and external skull bases	Ryoji Suzuki	基礎棟第 1 講義室
8	10 / 27 (Mon)	7-10	Practice	Theme: Osteology training 4 skull Observe and sketch the inner and outer skull bases. (1) Explain the name of each skull base and the structure. (2) Explain 3-dimensional relationship between head/face bones and muscles/nerves/blood vessels.	Yoshio Bando Ryoji Suzuki Hideo Akashi	第 2 実習室

Topics and Contents of class, Course Objectives						
	Class Date	**Period**	**Class Format**	**Topics and Contents of class, Course Objectives**	**Instructors**	**Class Room**
9	11 / 10 (Mon)	5-6	Lecture	Theme: Anatomy Lecture 1 Introduction of general human anatomy Understand the outline of human body structure and basic anatomical terms can be expressed accurately.	Yoshio Bando	基礎棟第 1 講義室
10	11 / 10 (Mon)	7-8	Lecture	Theme: Anatomy Lecture 2 Bone and joint general remarks (1) Explain the basic structure and function of bones, cartilage, joints, and ligaments.	Yoshio Bando	基礎棟第 1 講義室
11	11 / 10 (Mon)	9-10	Lecture	Theme: Anatomy Lecture 3 Bone and joint general remarks (2) (1) Explain the basic structure and function of bones, cartilage, joints, and ligaments (2) Explain the mechanism of bone growth and bone formation/resorption.	Yoshio Bando	基礎棟第 1 講義室
12	11 / 17 (Mon)	5-6	Lecture	Theme: Anatomy Lecture 4 Muscular system (1) (1) Explain the structure and function of the major muscles of the whole body. (2) Explain the innervation, and function of major muscles.	Ryoji Suzuki	基礎棟第 1 講義室
13	11 / 17 (Mon)	7-8	Lecture	Theme: Anatomy Lecture 5 Muscular system (2) (1) Explain the structure and function of the major muscles of the whole body. (2) Explain the innervation, and function of major muscles.	Ryoji Suzuki	基礎棟第 1 講義室
14	11 / 17 (Mon)	9-10	Lecture	Theme: Anatomy Lecture 6 Muscular system (3) (1) Explain the structure and function of the major muscles of the whole body. (2) Explain the innervation, and function of major muscles.	Ryoji Suzuki	基礎棟第 1 講義室
15	11 / 25 (Tue)	5-6	Lecture	Theme: Anatomy Lecture 7 Nervous system (1) Central nervous system Explain the outline of the central nervous system.	Yoshio Bando	基礎棟第 1 講義室
16	11 / 25 (Tue)	7-8	Lecture	Theme: Anatomy Lecture 8 Nervous system (2) Peripheral nervous system Explain the outline of the central nervous system.	Yoshio Bando	基礎棟第 1 講義室
17	11 / 25 (Tue)	9-10	Lecture	Theme: Anatomy Lecture 9 Heart Explain the basic structure of the heart.	Yoshio Bando	基礎棟第 1 講義室
18	12 / 1 (Mon)	5-6	Lecture	Theme: Anatomy Lecture 10 Blood vessels / lymphatic system (1) Explain the running and function of the major arteries, veins, and lymph of the whole body.	Yoshio Bando	基礎棟第 1 講義室
19	12 / 1 (Mon)	7-8	Lecture	Theme: Anatomy Lecture 11 Blood vessels / lymphatic system (2) Explain the running and function of the major arteries, veins, and lymph of the whole body.	Yoshio Bando	基礎棟第 1 講義室
20	12 / 1 (Mon)	9-10	Lecture	Theme: Anatomy Lecture 12 Respiratory system (1) Explain the basic structure of the respiratory system.	Yoshio Bando	基礎棟第 1 講義室
21	12 / 8 (Mon)	5-6	Lecture	Theme: Anatomy Lecture 13 Respiratory system (2) Explain the basic structure of the respiratory system.	Yoshio Bando	基礎棟第 1 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	12 / 8 (Mon)	7-8	Lecture	Theme: Anatomy Lecture 14 Digestive organs (1) Explain the basic structure of the upper gastrointestinal tract.	Yoshio Bando	基礎棟第 1 講義室
23	12 / 8 (Mon)	9-10	Lecture	Theme: Anatomy Lecture 15 Digestive organs (2) Explain the basic structure of the lower gastrointestinal tract.	Yoshio Bando	基礎棟第 1 講義室
24	12 / 15 (Mon)	5-6	Lecture	Theme: Anatomy Lecture 16 Kidney/urinary system Explain the basic structure of the kidney and urinary system.	Yoshio Bando	基礎棟第 1 講義室
25	12 / 15 (Mon)	7-8	Lecture	Theme: Anatomy Lecture 17 Genital 1) Explain the basic structure of the male reproductive organs. 2) Explain the basic structure of the female reproductive organs.	Yoshio Bando	基礎棟第 1 講義室
26	12 / 15 (Mon)	9-10	Lecture	Theme: Special Lecture (planned) A special lecture will be given by an outside lecturer.	Masahiko Watanabe	基礎棟第 1 講義室
27	12 / 22 (Mon)	5-6	Lecture	Theme: Examination Introductory human anatomy and osteology (including osteology training) examination will be performed to judgement to be able to take the unified examination. As a general rule, do not retest. The test range for the introduction to human anatomy is up to the previous week.	Yoshio Bando	基礎棟第 1 講義室
28	12 / 22 (Mon)	7-8	Examination	Theme: Special Lecture (planned) A special lecture will be given by the outside lecturer.	Shigetaka Yoshida	基礎棟第 1 講義室
29	12 / 22 (Mon)	9-10	Lecture	Theme: Special Lecture (planned) A special lecture will be given by the outside lecturer.	Shinya Ugawa	基礎棟第 1 講義室