

2025 Akita University Faculty of Medicine Syllabus

Category	: 臨床医学 II
Course Title	: Diagnostic Radiology and Radiation Oncology
Eligible Students	: grade 3 Related Course
Code	: 71633027
Schedule	: week 30 ~ week 36 (Fri Period 1-10)
Credits	: 1

1. Lead Instructor

Naoko	Mori	(Professor, Department of Radiology, 6179, Office Hour: North Clinical Research Building 1F Conference Room (12:00 13:00))
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2. Instructors

Naoko	Mori	(Professor, Department of Radiology, 6179, Office Hour: North Clinical Research Building 1F Conference Room (12:00 13:00))
Yuki	Wada	(Lecturer, Department of Radiology, 6179)
Takahiro	Otani	(Assistant Professor, Department of Radiology, 6179)
Noriko	Takagi	(Assistant Professor, Department of Radiology, 6179)
Tomoki	Tozawa	(Assistant Professor, Department of Radiology, 6179)
Motoko	Konno	(Assistant Professor, Department of Radiology, 6179)
Satoshi	Kumagai	(Assistant Professor, Department of Radiology, 6179)
Satoshi	Takahashi	(Part-time Lecturer, Hiraga General Hospital, 6179)
Koichi	Ishiyama	(Part-time Lecturer, Akita Municipal General Hospital)
Yuki	Shinohara	(Part-time Lecturer, Akita Cerebrospinal r and Cardiovascular Center)
Masazumi	Matsuda	(Part-time Lecturer)

3. Course Description Outline(Course Objectives)

授業の概要

画像を用いた形態診断・機能診断の概略を学ぶ (3-1,3-3)

放射線を用いた緩和・根治治療を学ぶ (1-1、2-5、2-6、4-3)

- 1) 造影剤 基礎・臨床 (3-2)
- 2) 放射線防護・管理 (3-5)
- 3) 放射線同位元素による治療と診断 (3-3)
- 4) 中枢神経疾患と画像診断の役割 (3-3)
- 5) 頭頸部画像診断 (3-3)
- 6) 婦人科 MRI 診断と乳腺画像診断 (3-3)
- 7) 虫垂炎の CT 診断 (interactive) (3-3)
- 8) 救急疾患の画像診断と IVR の適応 (3-3)
- 9) 放射線治療入門と最先端治療 (1-1,2-5,2-6,4-3)
- 10) 緩和治療 (1-1,2-5,2-6,4-3)

Course Description Outline

In this course, you will learn to outline morphological and functional diagnosis using imaging, and palliative and curative treatment using radiation. (3-1,3-3) (1-1、2-5、2-6、4-3)

- 1) Basis and clinical application of the contrast medium (3-2)
- 2) Radiation protection and management (3-5)
- 3) Radiation isotope therapy and diagnosis (3-3)

- 4) Central nervous system diseases and the role of diagnostic imaging
- 5) Head and neck imaging (3-3)
- 6) Gynecological MRI diagnosis and breast imaging diagnosis (3-3)
- 7) CT diagnosis of appendicitis (interactive) (3-3)
- 8) Imaging diagnosis of the emergency and IVR (3-3)
- 9) Basics and state-of-the-art radiation therapy (1-1,2-5,2-6,4-3)
- 10) Palliative care (1-1,2-5,2-6,4-3)

ねらい

放射線などを使用した診断と治療の基本を学ぶ
各モダリティの診断特性、適応や禁忌を学ぶ
災害時を含めた放射線防護・管理の基本を学ぶ

Course Objectives

You will learn the diagnostic characteristics, indications and contraindications of each modality.
You will learn the basics of diagnosis and treatment using radiation and other techniques, as well as the basics of radiation protection and management, including disaster management.

4. Textbook/Reference Books

標準放射線医学（医学書院）、必修放射線医学（南江堂）、新臨床 X 線診断学（医学書院）

5. Assessment

統一試験、出席状況、小テストにより評価する

Attendance, reports and examinations

6. Out of Class Study/Message

若干の授業変更の可能性があるので、掲示板で確認すること
指定教科書や事前配布資料などで、予習・復習をしておくこと

Slight changes may occur depending on the schedule of the instructor.
Prepare and review with designated textbooks and handouts.

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
1	12 / 5 (Fri)	1-2	Lecture	Theme: 造影剤 基礎・臨床 Basics and clinical application of the contrast medium ・造影剤の種類、適応、副作用、使用法を説明できる。 ・ Explain the types of contrast media, indications, side effects, and uses.	Naoko Mori	医学系研究棟 4 階 6 講
2	12 / 5 (Fri)	3-4	Lecture	Theme: 婦人科 MRI 診断と乳腺画像診断 Gynecological MRI diagnosis and breast imaging diagnosis ・ 骨盤部・乳腺疾患の画像所見を説明できる。 ・ Explain diagnostic imaging findings of pelvic and mammary gland disease.	Koichi Ishiyama	医学系研究棟 4 階 6 講
3	12 / 5 (Fri)	5-6	Lecture	Theme: 救急疾患の画像診断 Imaging diagnosis of the emergency diseases ・ よく経験する救急疾患の画像所見を説明できる。 ・ Explain diagnostic imaging findings of commonly-experienced illnesses.	Tomoki Tozawa	医学系研究棟 4 階 6 講
4	12 / 5 (Fri)	7-8	Lecture	Theme: IVR I ・ 血管造影検査及び血管内治療の種類、手法と頻度高い具体例について理解できる ・ Understand the types of angiography and endovascular treatment, as well as the methods and specific examples of frequent use.	Tomoki Tozawa	医学系研究棟 4 階 6 講
5	12 / 5 (Fri)	9-10	Lecture	Theme: 放射線治療入門と最先端治療 Basics and state-of-the-art radiation therapy ・ がん治療における放射線治療の役割を知る ・ 治療に用いる放射線の種類や作用機序を知る ・ 高精度放射線治療の種類、目的を知る ・ Learn about the role of radiation therapy in cancer treatment. ・ Learn about the types of radiation used in treatment their mechanisms of action. ・ Learn about the types and purposes of high-precision radiation therapy.	Yuki Wada	医学系研究棟 4 階 6 講
6	1 / 9 (Fri)	5-6	Exercise	Theme: 小テスト short test 造影剤、骨盤・乳腺画像診断 Contrast medium, imaging diagnosis of the pelvis and mammary gland	Naoko Mori Koichi Ishiyama	医学系研究棟 4 階 6 講
7	1 / 9 (Fri)	7-8	Exercise	Theme: 小テスト short test IVR・救急 1 Interventional radiology, imaging diagnosis of the emergency diseases	Tomoki Tozawa	医学系研究棟 4 階 6 講
8	1 / 9 (Fri)	9-10	Lecture	Theme: 緩和治療 Palliative care ・ 放射線を用いた緩和治療を説明できる ・ Outline palliative care using radiation.	Yuki Wada	医学系研究棟 4 階 6 講

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
9	1 / 16 (Fri)	5-6	Lecture	Theme: 頭頸部画像診断 Head and neck imaging ・頭頸部領域の画像解剖と主な疾患と画像所見について解説する ・Describe imaging anatomy, major diseases and imaging findings in the head and neck region.	Takahiro Otani	医学系研究棟 4 階 6 講
10	1 / 16 (Fri)	7-8	Lecture	Theme: 放射線同位元素による治療と診断 Diagnosis and treatment with radioisotopes ・放射線同位元素を使用した画像診断・治療の種類と適応を説明できる ・Explain the types and indications for diagnostic imaging and treatment using radioisotopes.	Masazumi Matsuda	医学系研究棟 4 階 6 講
11	1 / 16 (Fri)	9-10	Lecture	Theme: 放射線防護・管理 ・病院内で必要な放射線防護を説明できる ・災害時を含めた放射線による障害を説明できる ・ Explain radiation protection required in the hospitals. ・ Explain radiation damage, including during disasters.	Yuki Wada	医学系研究棟 4 階 6 講
12	1 / 23 (Fri)	5-6	Lecture	Theme: IVR II ・画像誘導下治療法を説明できる ・ Explain interventional radiology.	Satoshi Takahashi	医学系研究棟 4 階 6 講
13	1 / 23 (Fri)	7-8	Lecture	Theme: 放射線治療一般 I ・一般に行われる放射線治療を説明できる（外照射） ・ Explain common radiation therapy (external beam irradiation)	Satoshi Kumagai	医学系研究棟 4 階 6 講
14	1 / 23 (Fri)	9-10	Lecture	Theme: 放射線治療一般 II ・一般に行われる放射線治療を説明できる（小線源治療） ・ Explain common radiation therapy (small source therapy)	Noriko Takagi	医学系研究棟 4 階 6 講
15	1 / 30 (Fri)	5-6	Exercise	Theme: 小テスト Short test 放射線治療 Radiation therapy	Yuki Wada Noriko Takagi Satoshi Kumagai	医学系研究棟 4 階 6 講
16	1 / 30 (Fri)	7-8	Exercise	Theme: 小テスト short test RI, 防護・管理、IVR II Protection, nuclear medicine, IVR II	Yuki Wada Satoshi Takahashi Masazumi Matsuda	医学系研究棟 4 階 6 講 義室
17	1 / 30 (Fri)	9-10	Lecture	Theme: 虫垂炎の CT 診断 (interactive) CT diagnosis of appendicitis (interactive) ・CT 画像上で虫垂を同定し、虫垂炎の診断ができる ・ Identify appendicitis on CT images and make diagnose appendicitis	Koichi Ishiyama	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
18	2 / 6 (Fri)	5-6	Lecture	Theme: 頭部画像診断 Head imaging ・脳血管障害と頭部外傷の画像診断法について説明できる ・ Explain techniques for cerebrovascular disorders and head trauma.	Yuki Shinohara	医学系研究棟 4階 6講義室
19	2 / 6 (Fri)	7-8	Lecture	Theme: 脳疾患の画像診断 Central nervous diseases ・脳腫瘍, 先天性奇形, 変性疾患, 認知症等の特徴的画像所見を説明できる。 ・ Explain characteristic imaging findings of brain tumors, congenital malformations, degenerative disease, dementia, etc.	Motoko Konno	医学系研究棟 4階 6講義室
20	2 / 6 (Fri)	9-10	Exercise	Theme: 小テスト 頭部、頭頸部 short test Head and neck ・ 頭部、頭頸部 ・ Head and neck.	Takahiro Otani Motoko Konno Yuki Shinohara	医学系研究棟 4階 6講義室