Category VII (CC2)
Course Title Anesthesia and Intensive Care Medicine
Eligible Students grade 6 Elective Course
Code 71644006-19

1. **Lead Instructor**

   Yukitoshi Niiyama (Professor, Department of Anesthesiology and Intensive care
   , 6172, Office Hour: 8:30 - 17:00)

2. **Instructors**

   Yukitoshi Niiyama (Professor, Department of Anesthesiology and Intensive care
   , 6172, Office Hour: 8:30 - 17:00)
   Tetsu Kimura (Hospital Associate Professor, Division of Medical Security and Patient Safety
   , 6173, Office Hour: 8:30 - 17:00)
   Kyoko Abe (Assistant Professor, Department of Anesthesiology and Intensive care
   , 6175, Office Hour: 8:30 - 17:00)
   Koji Sato (Assistant Professor, Department of Anesthesiology and Intensive care
   , 6175, Office Hour: 8:30 - 17:00)
   Maiko Nakajima (Assistant Professor, Department of Anesthesiology and Intensive care
   , 6175, Office Hour: 8:30 - 17:00)
   Natsuko Yamamoto (Assistant Professor, Department of Anesthesiology and Intensive care
   , 6175, Office Hour: 8:30 - 17:00)
   Yuta Horikoshi (Assistant Professor, Department of Emergency medicine and Intensive care
   , 6175, Office Hour: 8:30 - 17:00)
   Sahoko Kodama (Assistant Professor, Department of Anesthesiology and Intensive care
   , 6175, Office Hour: 8:30 - 17:00)

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

   1. Aim

   This course provides opportunities to Learn about the medical abilities in the anesthesiology field that doctors in any field will need in the future through medical treatment for patients undergoing general anesthesia and local anesthesia as a member of the team, and to acquire an image of anesthesia work.

   1)In CC2, more full-scale clinical training in anesthesiology will be conducted based on the experience of CC1　3-1　3-7, 4-1 4-7　.
   2)Participate in anesthesiology medical care as a member of the team while assisting the anesthesia management of the instructor, such as inputting anesthesia records and assisting various procedures　2-1　2-8, 4-5　4-7　.
   3)Understand deeply one's own knowledge and understanding by instructing CC1 students　6-1　6-2　.
   4)For one week during the training period, practice at related hospitals in the prefecture (Akita Kousei Medical Center, Municipal Akita General Hospital, Nakadori General Hospital, Omagari Welfare Medical Center, Yuri Union General Hospital) and experience the actual situation of community medicine (it may not be done depending on the infection status of covid-19)　2-1　2-7, 3-6　3-7, 4-7　4-8　.
   5)Learn differential diagnosis and coping methods according to the specified case scenario, and give a presentation as a group 2-4, 3-1　3-3, 4-1　4-5, 6-1　6-2　.

   2. Learning goals
   The goals of this course are to learn and acquire

   1)Symptoms / pathological conditions Clinical reasoning　3-1　3-4, 3-6, 4-1　4-4
   (1) Hypertension / hypotension, (2) Arrhythmia, (3) Hypoglycemia, (4) Hypercarbonemia, (5) Shock, (6) Cardiac arrest, (7) Acidosis / alkalosis, (8) Electrolyte imbalance, (9) Hypertension / hypoglycemia, (10) Difficult airway, (11) Postoperative acute pain (12) Chronic pain

2)Basic clinical procedures   4-1, 4-5, 4-6

(1) Repositioning and transfer are possible, (2) Skin disinfection is possible, (3) Observe and assist the insertion of the peripheral venous catheter, (4) Observe and assist the insertion of the arterial catheter, (5) Arterial blood gas analysis can be performed, (6) Observe and assist the insertion of the central venous catheter, (7) insertion and remove the gastric tube, (8) Intravenous administration, (9) Observe and assist general anesthesia, local anesthesia, and blood transfusion (10) Create medical records (anesthetic records) (11) Observe various medical certificates, examination documents, and certificates and assist

3)Laboratory procedures   4-2. 4-5, 4-6

(1) Standard operating room vital sign monitors (electrocardiogram, non-invasive arterial pressure, percutaneous oxygen saturation, capnogram, bispectral index, core temperature, etc.) can be worn. (2) Arterial blood gas analysis can be performed.

4)Surgical procedure   4-1   4-8

(1) Aseptic technique can be performed. (2) You can wash your hands for the procedure. (3) Can perform gown techniques in the operating room. (4) Observe and assist in surgery, preoperative, intraoperative, and postoperative management. (5) Visit and assist nerve blocks.

5)Life-saving measures   3-1   3-7, 4-1   4-7

(1) Physical signs and vital signs can be used to determine that the situation is highly urgent. (2) Basic life support can be implemented. (3) Participate to the extent possible in the initial response of patients with high urgency, including advanced life support.

6)Anesthesiology practice   2-1   2-7, 3-1   3-7, 4-1   4-7

(1) Learn clinical reasoning and response to various symptoms and pathological conditions encountered during anesthesia management (above 2. Learning objectives-1)) through the medical treatment of a supervising doctor. (2) Participate in actual anesthesia management to the extent possible under the responsibility of the instructor.

7)Simulation education   3-1   3-6, 4-1   4-7, 6-1   6-2

(1) Improve clinical skills by repeatedly practicing using a high-performance anesthesia simulator (2) Acquire situational judgment and decision-making ability through his training using scenarios. (3) Experience venous line securing, arterial puncture, echo-guided area anesthesia, and epidural anesthesia using a simulator. (4) Improve self-reflection ability by looking back.

8)Competency education   1-1   1-2, 2-4   2-6, 3-1 3-7, 4-1   4-7, 5-1   5-4, 6-1   6-2

(1) Learn the pride (ethics, medical behavior) as a doctor by acting as a spokesperson for the patient in an environment where the patient's consciousness of anesthesia is lost and communication cannot be achieved. (2) Understand what to do when anesthesia-related complications occur based on the concept of medical safety. (3) Learn professionalism and team medical care while working in various occupations such as surgeons, nurses, and clinical engineers. (4) Learn recent evidence and guidelines for anesthesia and perioperative management.

1.
1)CC2   CC1   3-1   3-7, 4-1   4-7
2)
    2-1   2-8, 4-5   4-7
3)CC1   6-1   6-2
4)   1
                                                                                covid-19
        2-1   2-7, 3-6   3-7, 4-7   4-8
5)   2-4, 3-1

3-3, 4-1 4-5, 6-1 6-2

2.
1)   3-1 3-4, 3-6, 4-1 4-4
   1   2   3   4   5   6   7
                     8   9   10   11   12

2)   4-1, 4-5, 4-6
   1   2   3   4
                                    5   6
       7   8   9
     10   11

3)   4-2. 4-5, 4-6
   1   bispectral Index
                          2

4)   4-1 4-8
   1   2   3
       4   5

5)   3-1 3-7, 4-1 4-7
   1   2   3

6)   2-1 2-7, 3-1 3-7, 4-1 4-7
   1   2.   1
       2

7)   3-1 3-6, 4-1 4-7, 6-1 6-2
   1   2
                          3
                  4

8)   1-1 1-2, 2-4 2-6, 3-1 3-7, 4-1 4-7, 5-1 5-4, 6-1 6-2
   1
                                    2
         3
   4

4. **Textbook/Reference Books**

Miller's Anesthesia 9th edition Elsevier

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5. **Assessment**

Attitude, oral examination, OSCE, presentation, report (impression), 2 sentences, attendance, etc.

| | OSCE | | 2 sentences |

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

1.CC2 requires more active participation in medical care than CC1.

2.Please study the matters immediately before the practical training in the clinical clerkship guide of our university.

3.Please fill in the experience procedure and notebook.

4.Please participate Pain clinic outpatient training (Wednesday, Thursday)

5.In the 3rd week, we will practice at the anesthesiology department of the related hospital (it may not be done depending on the infection status of covid-19).

6.Training content and schedule are subject to change. Be sure to contact us in advance.

7.On the first day, please meet at the conference room in the operating room at 7:45.

1.CC2　　　CC1

2.

3.

4.

5.　　　　　　　　　　　　　　　covid-19

6.

7.　　　7　45

Schedule	Contents of Class
1 Mon [07:45 - 17:00] Orientation Surgical anesthesia case training Subtitle	07:45 - 08:45 Conference (review article reading, case presentation) 08:45 - 10:00 Surgical anesthesia case training 10:00 - 12:00 Orientation 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Instructor Yukitoshi Niiyama, Kyoko Abe, etc.	07:45 - 08:45 08:45 - 10:00 10:00 - 12:00 12:00 - 13:00 13:00 - 17:00
2 Tue [08:00 - 17:00] Surgical anesthesia case training Practical skill Subtitle	8:00 - 08:45 Conference (article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13:00 - 14:30 Practical skill 14:30 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Instructor Yukitoshi Niiyama, Koji Sato, etc.	08:00 - 08:45 08:45 - 12:00 12:00 - 13:00 13:00 - 14:30 14:30 - 17:00
3 Wed [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle	08:00 - 08:45 Conference (case review, case presentation) 08:45 - 12:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Instructor Natsuko Yamamoto, Maiko Nakajima, etc.	08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00
4 Thu [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients.
Instructor Tetsu Kimura, Natsuko Yamamoto, etc.	08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00
5 Fri [08:00 - 17:00] Surgical anesthesia case training Subtitle	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13:00 - 17:00 Preparation for presentation
Instructor Yuta Horikoshi, Sahoko Kodama, etc.	08:00 - 08:45 08:45 - 12:00 12:00 - 13:00 13:00 - 17:00

Schedule	Contents of Class
6 Mon [07:45 - 17:00] Surgical anesthesia case training Subtitle Instructor Kyoko Abe, Koji Sato, etc.	07:45 - 08:45 Conference (review article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 07:45 - 08:45 08:45 - 12:00 12:00 - 13:00 13:00 - 17:00
7 Tue [08:00 - 17:00] Surgical anesthesia case training Simulator training Case training Subtitle Instructor Kyoko Abe, Yuta Horikoshi, etc.	08:00 - 08:45 Conference (reading article, case presentation) 08:45 - 09:30 Surgical anesthesia case training 09:30 - 12:00 Anesthesia simulator training (OSCE) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 08:45 - 09:30 09:00 - 12:00 OSCE 12:00 - 13:00 13:00 - 17:00
8 Wed [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle Instructor Natsuko Yamamoto, Maiko Nakajima, etc.	08:00 - 08:45 Conference (case review, case presentation) 08:45 - 12:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 09:00 - 12:00 Pain clinic outpatient training 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00
9 Thu [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Subtitle Instructor Tetsu Kimura, Natsuko Yamamoto, etc.	08:00 - 08:45 Conference (reading article, case presentation) 08:45 - 12:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00
10 Fri [08:00 - 17:00] Surgical anesthesia case training Subtitle Instructor Yuta Horikoshi, Sahoko Kodama, etc.	08:00 - 08:45 Conference (reading article, case presentation) 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13:00 - 17:00 Preparation for presentation 08:00 - 08:45 08:45 - 12:00 12:00 - 13:00 13:00 - 17:00

Schedule		Contents of Class
11	Mon [07:45 - 17:00] Surgical anesthesia case training	07:45 - 08:45 Conference (review article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Subtitle		
Instructor	Kyoko Abe, Koji Sato, etc.	07:45 - 08:45 08:45 - 12:00 12:00 - 13:00 13:00 - 17:00
12	Tue [08:00 - 17:00] Surgical anesthesia case training Nitrous oxide inhalation experience	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 09:30 Surgical anesthesia case training 09:30 - 11:00 Nitrous oxide inhalation experience 11:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Subtitle		
Instructor	Yukitoshi Niiyama, Sahoko Kodama, etc.	08:00 - 08:45 08:45 - 09:30 09:30 - 11:00 11:00 - 13:00 13:00 - 17:00
13	Wed [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training)	08:00 - 08:45 Conference (case review, case presentation) 08:45 - 12:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Subtitle		
Instructor	Natsuko Yamamoto, Maiko Nakajima, etc.	08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00
14	Thu [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training)	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Subtitle		
Instructor	Tetsu Kimura, Natsuko Yamamoto, etc.	08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00
15	Fri [08:00 - 17:00] Surgical anesthesia case training	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training 12:00 - 13:00 Lunch 13: 00 - 17:00 Preparation for presentation
Subtitle		
Instructor	Yuta Horikoshi, Sahoko Kodama, etc.	08:00 - 08:45 08:45 - 12:00 12:00 - 13:00 13:00 - 17:00

Schedule	Contents of Class
16 Mon [07:45 - 17:00] Surgical anesthesia case training Preoperative medical examination training Subtitle	07:45 - 08:45 Conference (review article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training, preoperative medical examination training 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Instructor Kyoko Abe, Koji Sato, etc.	07:45 - 08:45 08:45 - 12:00 12:00 - 13:00 13:00 - 17:00
17 Tue [08:00 - 17:00] Surgical anesthesia case training Preoperative medical examination training Simulator training Case training Subtitle	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 09:30 Surgical anesthesia case training 09:30 - 12:00 Anesthesia simulator training (OSCE) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Instructor Koji Sato, Yuta Horikoshi, etc.	08:00 - 08:45 08:45 - 09:30 09:30 - 12:00 OSCE 12:00 - 13:00 13:00 - 17:00
18 Wed [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Preoperative medical examination training Subtitle	08:00 - 08:45 Conference (case review, case presentation) 08:45 - 12:00 Surgical anesthesia case training, preoperative medical examination training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients
Instructor Natsuko Yamamoto, Maiko Nakajima, etc.	08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00
19 Thu [08:00 - 17:00] Surgical anesthesia case training (Pain clinic outpatient training) Preoperative medical examination training Postoperative medical examination training Subtitle Surgical anesthesia case training (Pain clinic outpatient training) Preoperative medical examination training Postoperative medical examination training Yukitoshi Niiyama, Tetsu Kimura, Natsuko Yamamoto, etc. Instructor	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 12:00 Surgical anesthesia case training, preoperative medical examination training (09:00 - 12:00 Pain clinic outpatient training) 12:00 - 13:00 Lunch 13:00 - 17:00 Postoperative medical examination training, surgical anesthesia case training, preoperative evaluation, anesthesia planning, and preparation of surgical patients 08:00 - 08:45 08:45 - 12:00 09:00 - 12:00 12:00 - 13:00 13:00 - 17:00

Schedule	Contents of Class
20 Fri [08:00 - 12:00] Summary Presentation Subtitle	08:00 - 08:45 Conference (article reading, case presentation) 08:45 - 10: 00 Surgical anesthesia case training 10:00 - 12:00 Summary, presentation of learning content, submission of impressions
Instructor Yukitoshi Niiyama, Yuta Horikoshi, etc.	08:00 - 08:45 08:45 - 10:00 10:00 - 12:00