

2026 Akita University Faculty of Medicine Syllabus

Category	: 臨床医学 III
Course Title	: Emergency Medicine
Eligible Students	: grade 4 Related Course
Code	: 71633028
Schedule	: week 1 ~ week 6
Credits	: 0.5

1. Lead Instructor

Hajime Nakae (Professor, Department of Emergency and Critical Care Medicine, 6183, Office Hour: 8 : 30-17 : 00)

2. Instructors

Hajime Nakae (Professor, Department of Emergency and Critical Care Medicine, 6183, Office Hour: 8 : 30-17 : 00)

Manabu Okuyama (Associate Professor, Department of Emergency and Critical Care Medicine, 6184, Office Hour: 8 : 30-17 : 00)

Toshiharu Kitamura (Project Assistant Professor, General Medical Practice Center, 6185)

Kasumi Satoh (Assistant Professor, Department of Emergency and Critical Care Medicine, 6185)

Tsuyoshi Shirahata (Assistant Professor, Advanced Emergency and Critical Care Center, 6185)

Nobuhisa Hirasawa (Project Assistant Professor, General Medical Practice Center, 6185)

Koumei Kameyama (Project Assistant Professor, General Medical Practice Center, 6185)

3. Course Description Outline(Course Objectives)

- 1) 救急・災害医療の病態を理解し、その診断・治療を学ぶ。
- 2) 医師の義務や医療倫理を遵守するとともに患者の安全と心身の健康を最優先し、常に患者中心の立場で行動できる。(1-1,2, 2-1)
- 3) わかりやすく正確な説明、プレゼンテーションができ、カンファレンスを充実することができる。(2-4, 4-5,7)
- 4) チームの一員として患者・家族・医療者に敬意を持ち、信頼・協調して診療に従事することができる。(1-1, 2-1,5, 4-5,7)
- 5) 困難な状況下における患者・家族・医療者とのコミュニケーションができる。(2-7)
- 6) 重症救急疾患の病態生理を説明できる。(3-2)
- 7) 救急現場における医療安全・医療倫理を説明できる。(3-5)
- 8) 病院前救急診療医学を説明できる。(3-5,6,7, 4-7,8)
- 9) 検査結果を含めて総合的に診断し、適切な治療方針を計画できる。(3-1,2,3,4,5, 4-1,2,3,4)
- 10) 効果的に文献検索ができ、批判的に吟味して適切にEBMを実践できる。(3-3, 4-4, 5-1,2,3,4,)
- 11) 適切に診療記録を記載し、プレゼンテーションやコンサルテーションができる。(4-5)
- 12) 医療安全に配慮した基本的な手技が実践できる。(3-5,6, 4-2,6)
- 13) 地域医療・地域包括ケアを理解して、適切な医療連携と初期対応を実践できる。(3-7, 4-8)
- 14) 課題解決のための基礎となる科学的理論と方法論、研究倫理を理解し、実践することができる。(5-1,2,3,4)
- 15) 絶えず進歩する医学・医療について適切な情報収集能力と解析力を持ち、生涯にわたり自ら学び、自己研鑽を続けることができる。(5-1,2,3,4,5, 6-1,2)

1)Learn diagnosis and treatment in emergency and disaster medicine.

2)Comply with the responsibilities of a physician and follow medical ethics. Put the safety and health of a patient first, and always act for the wellbeing of a patient (1-1,2, 2-1) .

3)Present cases in a clear and detailed way and improve the quality of conferences (2-4, 4-5,7) .

4)Respect for patients, their families, and healthcare workers as a member of the team. Provide medical care with trust, confidence and coordination (1-1, 2-1,5, 4-5,7) .

5)Communicate with patients, their family, and healthcare workers under difficult circumstances (2-7).

6)Explain the pathophysiology of severe emergency diseases (3-2).

- 7) Explain safety and medical ethics in the ER (3-5).
- 8) Explain prehospital medicine (3-5,6,7, 4-7,8).
- 9) Diagnose comprehensively through measures including test results and decide on correct courses of treatment.
- 10) Conduct literature searches effectively and undertake critical scrutiny of them. Practice appropriate use of evidence-based medicine (3-3, 4-4, 5-1,2,3,4,).
- 11) Describe medical records accurately, present cases, and request consultation (4-5).
- 12) Perform a basic procedure safely (3-5,6, 4-2,6).
- 13) Understand regional medicine and regional comprehensive care, work with several medical experts, and perform a first response (3-5,6, 4-2,6).
- 14) Learn fundamental scientific theories that enable medical solutions, methodology, and research ethics (5-1,2,3,4).
- 15) Increase your information-gathering capacity and analytical potential for progressing medicine. Improve your knowledge and capabilities over a lifetime through continuing education (5-1,2,3,4,5, 6-1,2).

4. Textbook/Reference Books

1. 救急診療指針
2. BLS ヘルスケアプロバイダーマニュアル
3. ACLS プロバイダーマニュアル
4. 外傷初期診療ガイドライン

5. Assessment

出席状況、受講態度、統一試験などに基づいて総合的に評価する。

Assessments are to be evaluated totally upon attendance, attitude, and an over all exam.

6. Out of Class Study/Message

1. 講義日程は変更になる場合があります。
2. 教科書・参考書をもとに予習しておくこと。また、配布資料をもとに繰り返し復習しておくこと。

1. Schedules are subject to change.
2. Study in advance with a text and reference book. Review what you learned using 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	4 / 7 (Tue)	5-6	Lecture	<p>Theme: Burns</p> <p>1) Work in a trusting and cooperative manner as a member of a team, with respect for patients, families, and medical personnel. (1-1, 2-1,5, 4-5,7)</p> <p>2) Outline the pathophysiology of burns. (3-1,2)</p> <p>3) List diseases that should be differentiated in consideration of urgency and severity. (3-1,2,3,4, 4-1,2)</p> <p>4) Make a comprehensive diagnosis including examination results and plan appropriate treatment. (3-3, 4-1,2,3,4)</p> <p>5) To be able to search the literature effectively, critically examine the literature, and practice EBM appropriately. (4-4, 5-1,2,3,4)</p> <p>6) Understand basic procedures that take medical safety into consideration. (3-5, 4-6)</p> <p>7) Understand community medicine and comprehensive community care and understand appropriate medical coordination and initial response. (2-5, 6, 7, 3-7, 4-8)</p>	Hajime Nakae	Second ward, building 2, multi-purpose room.
2	4 / 7 (Tue)	7-8	Lecture	<p>Theme: Pre-hospital aid and emergency medical care system</p> <p>1) Outline prehospital emergency medicine. (3-5,6,7, 4-7,8)</p> <p>2) Understand about Doctor's Helicopter. (3-5,6,7, 4-7,8)</p> <p>3) Understand about doctor's car. (3-5,6,7, 4-7,8)</p> <p>4) Understand the diagnosis and treatment of crush syndrome (3-2,3,4,4-7,8)</p> <p>Understand scientific theory and methodology and research ethics as a basis for problem solving. (5-1,2,3,4)</p>	Nobuhisa Hirasawa	Second ward, building 2, multi-purpose room.
3	4 / 7 (Tue)	9-10	Lecture	<p>Theme: Shock</p> <p>1) Understand the definition and diagnosis of shock. (3-2,3)</p> <p>2) Understand the classification of causes of shock. (3-2,3)</p> <p>3) Understand the initial response to shock and treatment according to the cause. (3-3,4,5,6,7, 4-2,3,4,5,6,7,8)</p> <p>4) Understand the scientific theories and methodologies and research ethics that form the basis for problem solving. (5-1,2,3,4)</p>	Nobuhisa Hirasawa	Second ward, building 2, multi-purpose room.
4	4 / 14 (Tue)	5-6	Lecture	<p>Theme: Acute intoxication, heat stroke, and hypothermia</p> <p>1) Outline the pathophysiology of drug intoxication. (3-1,2)</p> <p>2) Outline the pathophysiology of heat stroke. (3-1,2)</p> <p>3) Outline the pathophysiology of hypothermia. (3-1,2)</p> <p>4) List diseases that should be differentiated in consideration of urgency and severity. (3-1,2,3,4, 4-1)</p> <p>5) Make a comprehensive diagnosis, including test results, and plan an appropriate treatment plan. (3-3, 4-1,2,3,4)</p>	Hajime Nakae	Second ward, building 2, multi-purpose room.

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
5	4 / 14 (Tue)	7-8	Lecture	<p>Theme: Essential National Exam Knowledge for Emergency Department Practice Thinking Through Symptoms Initial Management and Diagnostic Strategy</p> <p>1) Explain initial emergency response procedures. (1-1,2,3,3-1,3-4,4,4-1)</p> <p>2) List points to note regarding family communication during initial emergency response. (2-1,2,3)</p> <p>3) Plan appropriate treatment strategies. (3-1,2,3,4-2,4,5)</p> <p>4) Conduct effective literature searches, critically evaluate findings, and appropriately practice evidence-based medicine. (4-4,5,2,3,4)</p> <p>5) Accurately document medical records and conduct presentations and consultations. (2-4,3,6,4-5,7)</p> <p>6) Understand basic procedures with consideration for patient safety. (3-5,6,4-2)</p>	Kasumi Satoh	Second ward, building 2, multi-purpose room.
6	4 / 14 (Tue)	9-10	Lecture	<p>Theme: Essential National Exam Knowledge for Emergency Department Practice Thinking Through Symptoms Initial Management and Diagnostic Strategy</p> <p>1) Understand the classification of causes of cardiac arrest into cardiovascular (Acute myocardial infarction, acute aortic dissection, ruptured aortic aneurysm, pulmonary embolism), respiratory (Airway obstruction, tension pneumothorax, hypoxemia due to pulmonary parenchymal lesions), neurogenic (Severe head and spinal cord trauma, acute subarachnoid hemorrhage), toxic/environmental factors (Poisoning, heat-stroke, hypothermia), and electrolyte/acid-base imbalance (Hypokalemia/hyperkalemia, acidosis, hypoglycemia), along with their pathophysiology and key diagnostic points. (3-2,3,4-3)</p> <p>2) Understand the initial response (primary and secondary life-saving measures) for cardiac arrest patients and the treatment appropriate to the cause. (3-2,3,4-3)</p> <p>3) Understand the symptoms of disorders caused by atmospheric pressure, vibration, and noise, as well as the main examinations, diagnoses, and treatment methods. (3-2,3,4-3)</p>	Kasumi Satoh	Second ward, building 2, multi-purpose room.
7	4 / 21 (Tue)	5-6	Lecture	<p>Theme: Disaster Medicine</p> <p>1) Outline the disaster medical supply system. (3-6,7)</p> <p>2) Understand triage in disaster medical care. (4-1,2,3,4,5,6)</p> <p>3) Understand community medicine and comprehensive community care, and understand appropriate medical coordination and initial response. (2-5,6,7, 3-7, 4-8)</p> <p>4) Understand scientific theory and methodology and research ethics as a basis for problem solving. (5-1,2,3,4,5)</p>	Manabu Okuyama	Second ward, building 2, multi-purpose room.

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8	4 / 21 (Tue)	7-8	Lecture	<p>Theme: Sepsis and multiple organ failure</p> <p>1) Explain the difference between sepsis and bloodstream infection. (3-2,3)</p> <p>2) Explain the principles of antimicrobial administration (submit culture specimens before administering antimicrobials, select standard agents based on microorganisms and organs, and set the treatment duration). (3-2,3,4-3)</p> <p>3) Explain initial antimicrobial therapy (empirical treatment). (3-2,3,4-3)</p> <p>4) Explain optimal antimicrobial therapy (standard treatment). (3-2,3,4-3)</p> <p>5) Understand organ failure (multiple organ failure, cytokine storm, disseminated intravascular coagulation). (3-2,3)</p> <p>6) Understand the initial management of shock patients and treatment based on the cause. (3-2,3,4-3,4)</p> <p>7) Understand the conditions requiring artificial respiration management, extracorporeal membrane oxygenation (ECMO), mechanical circulatory support, and acute blood purification methods, along with their significance. (3-2,3,4-3,4)</p>	Koumei Kameyama	Second ward, building 2, multi-purpose room.
9	4 / 21 (Tue)	9-10	Self learning	Theme:		Second ward, building 2, multi-purpose room.
10	4 / 28 (Tue)	5-6	Lecture	<p>Theme: Restoring Limb</p> <p>1) Explain the initial treatment of severe extremity trauma. (3-1,2,3,4)</p> <p>2) Explain the treatment of amputated limbs and fingers (3-1,2,3,4).</p> <p>3) Plan comprehensive treatment for functional recovery after reattachment of an amputated limb/finger. (3-1,2,3,4, 4-2,3,)</p>	Tsuyoshi Shirahata	Second ward, building 2, multi-purpose room.
11	4 / 28 (Tue)	7-8	Lecture	<p>Theme: Truma 1</p> <p>1) Understand the pathophysiology of trauma and the essentials of diagnosis. (3-1,2,3,4,)</p> <p>2) List diseases that should be differentiated in consideration of urgency and severity. (3-1,2,)</p> <p>3) Understand the classification of causes of trauma (3-1,2,3)</p> <p>4) Make a comprehensive diagnosis including examination results and plan an appropriate treatment plan. (3-1,2,3,4,5, 4-1,2,3,4)</p>	Manabu Okuyama	Second ward, building 2, multi-purpose room.
12	4 / 28 (Tue)	9-10	Self learning	<p>Theme: Truma 2</p> <p>1) Understand the pathophysiology of trauma and the essentials of diagnosis. (3-1,2,3,4,)</p> <p>2) List diseases that should be differentiated in consideration of urgency and severity. (3-1,2,)</p> <p>3) Understand the classification of causes of trauma (3-1,2,3)</p> <p>4) Make a comprehensive diagnosis including examination results and plan an appropriate treatment plan. (3-1,2,3,4,5, 4-1,2,3,4)</p>	Manabu Okuyama	Second ward, building 2, multi-purpose room.

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	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
13	5 / 12 (Tue)	5-6	Lecture	<p>Theme: Intensive Care Medicine: General Theory</p> <p>1) Understand the outline of intensive care and intensive care units. (3-1,2,)</p> <p>2) Understand organ failure (multiple organ failure, cytokine storm, disseminated intravascular coagulation syndrome). (3-1,2,3,4,5)</p> <p>3) Understand the biological invasion and biological reactions that occur in invasive procedures (surgery, trauma, burns). (3-1,2,3,4,5)</p> <p>4) Understand temperature management (including temperature maintenance therapy) and nutritional management for critically ill patients. (3-1,2,3,4,5)</p> <p>5) Understand the concept of post-intensive care syndrome. (5-1,2,3,4,5)</p>	Manabu Okuyama	Second ward, building 2, multi-purpose room.
14	5 / 12 (Tue)	7-8		<p>Theme: Intensive Care: Specific Topics 1</p> <p>1) Outline the pathophysiology of patients with organ failure. (3-1,2)</p> <p>2) Understand the conditions requiring artificial respiration management and its significance. (3-1,2,3,4,5)</p> <p>3) Understand the conditions requiring ECMO and its significance. (3-1,2,3,4,5)</p> <p>4) Understand the fundamental scientific theories and methodologies, as well as research ethics, necessary for solving problems. (5-1,2,3,4,5)</p>	Koumei Kameyama	Second ward, building 2, multi-purpose room.
15	5 / 12 (Tue)	9-10	Lecture	<p>Theme: Intensive Care: Specific Topics 2</p> <p>1) Outline the pathophysiology of patients with organ failure. (3-1,2)</p> <p>2) Understand the conditions requiring acute blood purification therapy and its significance. (3-1,2,3,4,5)</p> <p>3) Understand temperature management (including temperature maintenance therapy) and nutritional management for critically ill patients. (3-1,2,3,4,5)</p> <p>4) Understand the fundamental scientific theories and methodologies, as well as research ethics, necessary for solving problems. (5-1,2,3,4,5)</p>	Koumei Kameyama	Second ward, building 2, multi-purpose room.
16	5 / 19 (Tue)	5-6	Lecture	<p>Theme: Multidisciplinary cooperation</p> <p>1) Effectively search the literature, critically examine it, and practice EBM appropriately. (4-4, 5-1,2,3,4)</p> <p>2) Appropriately record medical records and give presentations and consultations. (2-4,3,6, 4-5,7)</p> <p>3) Understand community medicine and comprehensive community care, and understand appropriate medical coordination and initial response. (2-5,6,7, 3-7, 4-8)</p> <p>4) Understand scientific theory and methodology and research ethics as a basis for problem solving. (5-1,2,3)</p>	Toshiharu Kitamura	Second ward, building 2, multi-purpose room.

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	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
17	5 / 19 (Tue)	7-8	Lecture	<p>Theme: BSP model</p> <p>1) Understand that the physician's duty and medical ethics must be observed and that the patient's safety and physical and mental health must be given the highest priority, and that the physician must always act from a patient-centered standpoint. (1-1,2, 2-1,2,3,4,5,)</p> <p>2) Explain medical safety and medical ethics in general practice. (3-5)</p> <p>3) Make a comprehensive diagnosis including test results and plan an appropriate treatment plan. (3-3, 4-1,2,3,4)</p> <p>3) Comply with the duties of a physician and medical ethics, prioritize the safety and physical and mental health of patients, and always act from a patient-centered standpoint. (1-1,2)</p> <p>4) Give clear and accurate explanations and presentations and enhance conferences. (2-5,6)</p> <p>5) Respect patients, families, and medical staff as a member of a team, and engage in medical treatment in a trusting and cooperative manner. (2-5)</p> <p>6) Communicate with patients, families, and medical personnel in difficult situations. (2-8)</p>	Toshiharu Kitamura	Second ward, building 2, multi-purpose room.
18	5 / 19 (Tue)	9-10	Self learning	Theme:		Second ward, building 2, multi-purpose room.