

Category (科目区分)	Cluster of Organ Development and Regenerative Systems		
Course Title (授業科目名)	Regenerative medicine / practice		
Instructors (担当者名)	Yoshihiro Matsumura	Academic Year (配当年次)	1
Required Course / Elective Course (必修/選択)	Elective Course	Credits (単位数)	1
Class Format (授業形態)	Lecture & Practice		
Schedule (開講期間)	Students will be notified by email after completing the course registration.		
Class Date/Period (開講曜日・時間)	Students will be notified by email after completing the course registration.		
Course Outline/ Course Objectives (授業の概要・到達目標)			
<p>Purpose of class: The purpose of the class is to understand the basics and applications of regenerative medicine in medical research.</p> <p>Achievement goal of class: The goal is to understand the historical background and basic knowledge of regenerative medicine research, and to be able to think and discuss what is necessary to realize advanced medical care such as regenerative medicine in the future.</p> <p>Class outline: Outline the basics and applications of regenerative medicine. Based on the historical background of research on regenerative medicine and tissue engineering aimed at application and practice, we will outline recent research on regenerative medicine by inducing differentiation of iPS cells. Also, learn basic research on the mechanism of aging and tissue regeneration using advanced technologies such as recent single-cell analysis. In order to deepen the practical understanding of regenerative medicine research, we will conduct experimental training on ES cell culture and differentiation induction.</p>			
Course Planning (授業計画)			
	Course Outline/ Course Objectives (授業の概要及び到達目標) (Contents of Class) (授業内容)	Instructor (担当教員名)	Department (講座名) Class Room [実施場所]
1	Outline of regenerative medicine	Yoshihiro Matsumura Yukio Koizumi Jianbo An	Department of Biochemistry and Metabolic Science [Reserch Building for Basic Medicine 4th floor, Laboratory]
2			
3	Introduction to Tissue Engineering	Yoshihiro Matsumura Yukio Koizumi Jianbo An	
4			
5	Introduction to iPS cells and ES cells	Yoshihiro Matsumura Yukio Koizumi Jianbo An	
6			
7	Introduction to regenerative medicine research using iPS cells	Yoshihiro Matsumura Yukio Koizumi Jianbo An	
8			
9	Practical training: ES cell culture and differentiation induction experiments	Yoshihiro Matsumura Yukio Koizumi Jianbo An	
10			
Grading Criteria (成績評価の基準と方法)			
30 hours of lectures in the lecture room + 15 hours of self-study, 45 hours in total, will be one credit, and the evaluation will be made in consideration of the attendance status, the results of oral and written examinations, and the contents of the submitted report.			
Contact Information (問い合わせ先(氏名, メールアドレス等))			
Name: Yoshihiro Matsumura / E-mail: ymatsumura@med.akita-u.ac.jp			
Comment (その他特記事項)			
<p>Information about courses: If you cannot attend the training due to work, such as a graduate student who is a member of society, we will adjust the schedule.</p> <p>Textbooks / References: Distribute materials as needed. Alternatively, specify the document.</p> <p>Self-study content during self-study time: It is desirable to carry out preparatory learning according to the goals and lesson content.</p>			