

Course Schedule Information

Course Code	271288
Semester	Spring Term
Day and Period	Thu1
Course Name (Japanese)	Current Topics 4
Room	Lecture Room B
Course Name	Current Topics 4
Capacity	999
Course Numbering Code	27ADPS6T147
Credits	1.0
Student Year	1,2
Instructor	TSUJIKAWA Kazutake,MIZUGUCHI Hiroyuki,Saitoh Tatsuya,FUKUZAWA Kaori,SAKURAI Fuminori,TAKEMURA Naoki,JINGUSHI Kentaro,TAKAYA Daisuke
Course of Media Class	Not Applicable

※About Course of Media Class
 "Course of Media Class" are classes in which more than half of the classes are held in places other than classrooms by making advanced use of various media.
 Undergraduate students can include up to 60 credits in media class course as requirements for graduation.
 Even if this is not the case, we may hold classes using the media.

Basic Syllabus Information

Other	Students who require special accommodation due to disabilities should consult with Education Affairs Section at the Graduate School and School of Pharmaceutical Sciences beforehand.
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Detailed Syllabus Information

Course Subtitle	Molecular Cellular Structural Biology for Drug Development						
Language of the Course	English						
Type of Class	Lecture Subject						
Course Objective	In this lecture, faculty members from the Graduate School of Pharmaceutical Sciences, who are conducting cutting-edge research in the life sciences, such as molecular biology, cell physiology, immunology, and structural life sciences, will introduce their research. The objective of this course is to provide students with knowledge, information and strategies for drug discovery through exposure to such cutting-edge research.						
Learning Goals	Acquire cutting-edge information and knowledge of life science research. Students can cultivate the creativity and the ability to construct research methods to develop drug discovery research.						
Requirement / Prerequisite	Basic knowledge of the field of pharmaceutical life sciences is required.						
Class Plan	<div>Faculty members of the Graduate School of Pharmaceutical Sciences will introduce cutting-edge life science research in a total of eight lectures.</div> <table> <tr> <td>1st</td><td>4/11 Period:1 Title:Intravital imaging of autoimmunity in the Central Nervous System</td></tr> <tr> <td></td><td>Intravital imaging techniques provide insight into the pathogenesis of autoimmune diseases in the central nervous system.</td></tr> <tr> <td></td><td>Instructor : Kazutake Tsujikawa</td></tr> </table>	1st	4/11 Period:1 Title:Intravital imaging of autoimmunity in the Central Nervous System		Intravital imaging techniques provide insight into the pathogenesis of autoimmune diseases in the central nervous system.		Instructor : Kazutake Tsujikawa
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	Intravital imaging techniques provide insight into the pathogenesis of autoimmune diseases in the central nervous system.						
	Instructor : Kazutake Tsujikawa						

	Room : Lecture Room B
2nd	4/20 Period:1 Title:Role of extracellular vesicles in disease and potential for clinical application
	Extracellular vesicles (EVs) are released by all three domains of life (eukaryotes, bacteria, and archaea) and represent an evolutionarily conserved mechanism for intercellular communication. This lecture will introduce the role of EVs in various diseases and their potential clinical applications.
	Instructor : Kentaro Jingushi
	Room : Lecture Room B
3rd	4/27 Period:1 Title:Oncolytic viruses for cancer therapy
	This lecture introduces the cancer therapy using oncolytic viruses, which replicate in and kill tumor cells in a tumor cell-specific manner.
	Instructor : Fuminori Sakurai
	Room : Lecture Room B
4th	5/11 Period:1 Title:Development of functional enterocytes and hepatocytes by using regenerative medicine-derived techniques for pharmaceutical research
	This lecture introduces development of functional enterocytes and hepatocytes by using regenerative medicine-derived techniques for pharmaceutical research
	Instructor : Hiroyuki Mizuguchi
	Room : Lecture Room B
5th	5/18 Period:1 Title:Understanding and controlling the innate immune response
	This lecture will explain the mechanisms of host defense induced by innate immunity. In addition, this lecture will also explain the mechanisms of disease development caused by aberrant innate immunity and therapeutic agents for immune system disorders.
	Instructor : Tstsuya Saito
	Room : Lecture Room B
6th	5/25 Period:1 Title:Understanding and controlling cell death-induced sterile inflammation in barrier tissues
	This lecture introduces the mechanism of cell death-mediated inflammation caused by non-infectious external stimuli in the barrier tissues, including digestive tract, respiratory tract and skin, and appropriate development of drug treatment.
	Instructor : Naoki Takemura
	Room : Lecture Room B
7th	6/1 Period:1 Title:Current topics on in-silico drug discovery research
	In this lecture, in-silico drug discovery research, which is positioned as the basic research part of drug discovery research, will be introduced including SBDD and LBDD.
	Instructor : Daisuke Takaya
	Room : Lecture Room B
8th	6/8 Period:1 Title:Structural life science research using quantum chemical calculations
	Quantum chemical calculation is a high-precision theoretical method that can analyze molecular interactions and chemical reactions based on the electronic states of molecules. Here, recent topics on the analysis of molecular recognition mechanisms and prediction of molecular bindings using quantum chemical calculations will be explained.
	Instructor : Kaori Fukuzawa
	Room : Lecture Room B
Independent Study Outside of Class	Before the lecture, students should obtain basic information from the lecture title. Students are expected to deepen their understanding of the content of each lecture by using references and other materials.
Textbooks	
Reference	Molecular Biology of the cell (Newton Press)

Grading Policy	Submit reports on assignments submitted in each lecture 100%
Attendance and Student Conduct Policy*	Attendance of at least two-thirds of all lectures is required. If the number of attendances is less than this, it will not be eligible for grading.
Other Remarks	
Special Note	
Office Hour	Office hours are set for lunch on lecture days. Please email us in advance.
Keywords	genome, signal transduction, stem cells, immunocompetent cells, in silico drug discovery, cancer, inflammation, intravital imaging
Messages to Prospective Students	In this lecture, life science research that leads to cutting-edge drug discovery will be introduced.

Instructor(s)

Instructor Name	Extension
Kazutake Tsujikawa	8190
Kentaro Jingushi	8193
Hiroyuki Mizuguchi	8185
Fuminori Sakurai	8188
Tatsuya Saito	8170
Naoki Takemura	5793
Kaori Fukuzawa	8240
Daisuke Takaya	8243

Cautions for Students