

科目名		Subject name	
Molecular Cell Biology 【220301】		Molecular Cell Biology 【220301】	
科目区分 (Course type)	単位数 (Credits)	選択・必修 (Elective/Compulsory)	授業形態 (Course format)
International Course (International Course)	1	必修 (Compulsory)	講義 (Lecture)
開講時期 (Course start)		講義室 (Room)	
1年次秋		10/10 【D105】 10/17-12/19 【L13】 1/10 【L12】	

1. 科目の概要 (Course outline)

【担当教員 (Teacher)】	担当教員筆頭者名 (Supervising teacher)
Inagaki, Ishida, Kawai, Komai, Saijo, Suetsugu, Umeda	Maki H
【教育目的/授業科目 (Course objectives)】	
To provide fundamental concepts in modern cell biology of eukaryotes. This course examines the structure and regulatory mechanisms of the cell that constitutes animal/plant systems. "Molecular Cell Biology" offers students advanced exposure to the basics and forefront of cell biology research, which plays instrumental roles in medicine, biotechnology and agricultural biology.	
【指導方針 (Course methodology)】	
Before each lecture, students are expected to prepare themselves with the assigned readings from the textbook "Essential Cell Biology". Each class starts with a 5-min quiz that asks simple questions from the assigned reading. Subsequently, a selected video lecture by an eminent researcher in the field will be viewed, followed by discussion. In the class, students are advised to be diligent in taking notes, which can be brought in when they take the final exam.	

2. 授業計画等 (Course plan)

	【テーマ (Topic)】	【内容 (Content)】
1回	Introduction to the course / Mechanisms of DNA repair [Maki H]	iBioSeminar (http://www.ibiology.org/ibioseminars.html); Mechanism of DNA repair (by Jim Haber)
2回	Lipids as organizers in cell membranes [Suetsugu]	iBioSeminar: Lipids as organizers in cell membranes (by Kai Simons)
3回	The molecular biology of gene regulation [Ishida]	iBioSeminar: The molecular biology of gene regulation (by Robert Tijan)
4回	Protein secretion and vesicle traffic [Komai]	iBioSeminar: Protein secretion and vesicle traffic (by Randy Schekman)
5回	Cytoskeletal motor proteins [Inagaki]	iBioSeminar: Cytoskeletal motor proteins (by Ron Vale)
6回	Adhesion, Signaling and Cancer [Kawai]	iBioSeminar: Adhesion, signaling and cancer (by Mary Beckerle)
7回	Protein kinases; structure, function and regulation [Saijo]	iBioSeminar: Protein kinases; structure, function and regulation (by Susan Taylor)
8回	Controlling the cell cycle [Umeda]	iBioSeminar: Controlling the cell cycle (by David Morgan)
9回	Final Exam (11:00-13:00) 【L12】	
【テキスト (Textbook)】		
Alberts et al., Essential Cell Biology, 4th ed. (Garland Science)		
【参考書 (Reference book)】		
iBioSeminar (http://www.ibiology.org/ibioseminars.html)		

3. その他 (Other information)

【履修条件 (Eligibility for this course)】
Assigned pre-class reading prior to each lecture.
【オフィスアワー (Consultation times)】
Available by appointments. Contact the instructors by e-mail.
【成績評価の方法と基準 (Grades/Evaluation)】
In-class quizzes 1-8 (40%) + Final exam (60%)
【関連科目 (Related courses)】
【注意事項 (Important information)】
Final exam from 9:20 to 11:20 on Thursday, Dec. 25. You can bring in your own handwritten lecture notes.