

Subject	Advanced Lecture on Animal Science (応用動物・酪農科学概論)	Day/Period	1 <sup>st</sup> quarter Fri./3 <sup>rd</sup> ~4 <sup>th</sup>	Object	AMB/JYPE
Instructor (Post)	Tetsuya Tanaka, Sanggun Roh et al.	Categories	Specialized Subjects	Preferable Participants	3rd&4th-year students
Position	Faculty of Agriculture (Graduate School of Agricultural Science)	Credits	2		
		Semester	7 and 9		
Subject Numbering	ABS-ANS360E	Language Used in Course	English		
1. Class subject <b>Advanced Lecture on Animal Science</b>					
2. Object and summary of class To understand the scientific and technological advances in animal life science related with the efficient production and advanced utilization of higher quality products such as milk, meat, clothing, and medicines from animals, which are mainly livestock and poultry.					
3. Keywords Animal Reproduction and Development, Animal Nutrition, Animal Breeding and Genetics, Animal Physiology, Animal Functional Morphology, Animal Microbiology, Animal Food Function, Land Ecology and Sustainable Animal Environment					
4. Goal of study Students will understand the advanced animal science and learn different techniques for research.					
5. Contents and progress schedule of class: 1) Guidance and Ruminant Physiology in Beef cattle (Sanggun ROH) 2) Molecular nutrition: Interaction of nutrients, gene regulations and performance (Kan SATO) 3) Sperm stem cell behaviors in mammalian testis (Kenshiro HARA) 4) Functional morphology in mucosal immune tissues (Tomonori NOCHI) 5) Machine Learning Applications in Livestock Disease Management (Jahidul ISLAM) 6) Zoonoses (Kentaro KATO) 7) Introduction of hard tick, <i>Haemaphysalis longicornis</i> (Tetsuya TANAKA) 8) Role of the gut microbiota in health and disease (Keita NISHIYAMA) 9) Forage production and livestock grazing systems in Japan (Shin-ichiro OGURA) 10) Selenium in Agriculture (Ryuta TOBE) 11) Energy production from organic wastes using the small methane fermentation system (Chika TADA) 12) Introduction to quantitative genetics (Yoshinobu UEMOTO) 13) Functions of Phytobiotics in animals (Motoi KIKUSATO) 14) General Discussion (Sanggun ROH) 15) General Discussion (Sanggun ROH)					
6. Preparation: N/A					
7. Record end evaluation method: Attendance to the lectures 50%, reports 50%. Evaluation will be based on the quality of the reports submitted for each teacher's lecture.					
8. Textbook and references: There are no textbooks. Reference books or materials will be introduced within each lecture.					
9. Self study: Students are required to review using references, and to prepare the reports on the selected lectures.					
10. Practical business: N/A					
11. In addition Questions will be taken directly after each class or anytime through e-mail. Contact: Prof. Sanggun ROH E-mail: sanggun.roh@tohoku.ac.jp					