Module designation	Advanced Egg Science and Technology
Semester(s) in which the module is taught	Even Semesters
Person responsible for the module	Prof. Dr. Ir. Nurliyani, MS., IPM. Prof. Widodo, SP., M.Sc., Ph.D.
Language	Bahasa and English
Relation to curriculum	Specialization's elective
Teaching methods	Classical lecture and discussion
Workload (incl. contact hours, self-study hours)	Total workload: 79 hours Contact hours: – Lecture: 23 hours – Academic activity: 28 hours Private study: 28 hours
Credit points	2/0
Required and recommended prerequisites for joining the module	None

Module objectives/intended learning outcomes	Course Outcomes (CO):
	1. Increase knowledge and the comprehension of basic science of component and egg structures, egg processing principles and the instrument development which is used for egg processing both food and non-food.
	2. Increase the intellectual ability in evaluating the nutritional value of egg product and processed egg, able to identify the egg component for being developed into various product which is useful for humans.
	
	Expected Learning Outcomes:
	– Mastery in Sciences:
	  1. Able to master the current animal science and its application theory. (CO1)
	  2. Able to master the livestock production science, animal nutrition and fed science, animal products technology, and the livestock social economics in relation to food security and environment. (CO2)
	
	– Special skills:
	  1. Able to make innovation in the animal husbandry based on the development of science and technology. (CO1)
	  2. Able to design interdisciplinary and multidisciplinary research in the animal husbandry. (CO1)
	  3. Able to formulate and solve problems in the national development especially in terms of animal husbandry. (CO2)
	  4. Able to solve problems and anticipate issues in the development of animal science and industry. (CO2)
	– General skills:
	  1. Able to develop logical, critical, systematic, and creative thought through scientific research, creation of design in the science and technology, which pays attention and applies humanity values according to their expertise. The graduates are able to arrange scientific concept and the study result

	based on the principles, procedures, and scientific ethics. (CO1) 2. Able to identify the science that becomes their research object and position it to a research map by using information technology in the context of science development and expertise implementation developed through interdisciplinary or multidisciplinary approaches. (CO2) 3. Able to make a decision in the context of solving problems in the development of science and technology, which pays attention and applies humanity values based on analysis study or experiment towards information and data. (CO2) 4. Able to communicate the result of reasoning and scientific research in form of thesis and scientific writing responsibly based on academic ethics in the accredited national journal. (CO2)
Content	This course of Advanced Egg Science and Technology is elective course of animal product technology for graduate students. This course is basically an advanced course from the undergraduate degree that provides egg science and technology. An advanced egg science and technology will discuss protein component, carbohydrate and good fat seeing from physical structure, chemistry, and its characteristics. Next, it will elaborate physico-chemistry, functional, and egg nutritional value. The characteristics of physico-chemistry of egg protein will discuss viscosity, surface activity, and egg pH alteration. The egg functional characteristics discusses clumping, fertilization, emulsification process and type, and its influencing factors. Besides, it also explains egg microbiology and egg application in the industry both food and non-food. The egg microbiology discusses the egg damage which is caused by microbiology and the type of its damage. The discussion is expected to open the student's knowledge about the egg potency for being able to develop the knowledge and apply them in the egg processing technology. Hence, students are expected to be able to produce the research or technology that is useful for human by utilizing egg commodity.

Exams and assessment formats	Assessment Components	Course Outcomes (CO)	Percentage (%)
	1. Midterm exam (written test, take home exam, paper assignment)	CO1	35
	2. Final exam (written test, take home exam, paper assignment)	CO1 & CO2	25
	3. Presentation	CO2	15
	4. Take-home written assignments (paper)	CO2	15
	Grade and Score		
	Grade	Score	Grade	Score
	A	≥80	C+	45-49,9
	A-	75-79,9	C	40-44,9
	A/B	70-74,9	C-	35-39,9
	B+	65-69,9	C/D	30-34,9
	B	60-64,9	D+	25-29,9

	B-	55-59,9	D	20-24,9
	B/C	50-54,9	E	0-19,9
Study and examination requirements	The final grade in the module is composed of 35% performance on Midterm exam, 25% final exam, 15% presentation, 15% paper. Students must have a final grade of 70% or higher to pass			
Reading list	– Learning books and articles related to the topics.			