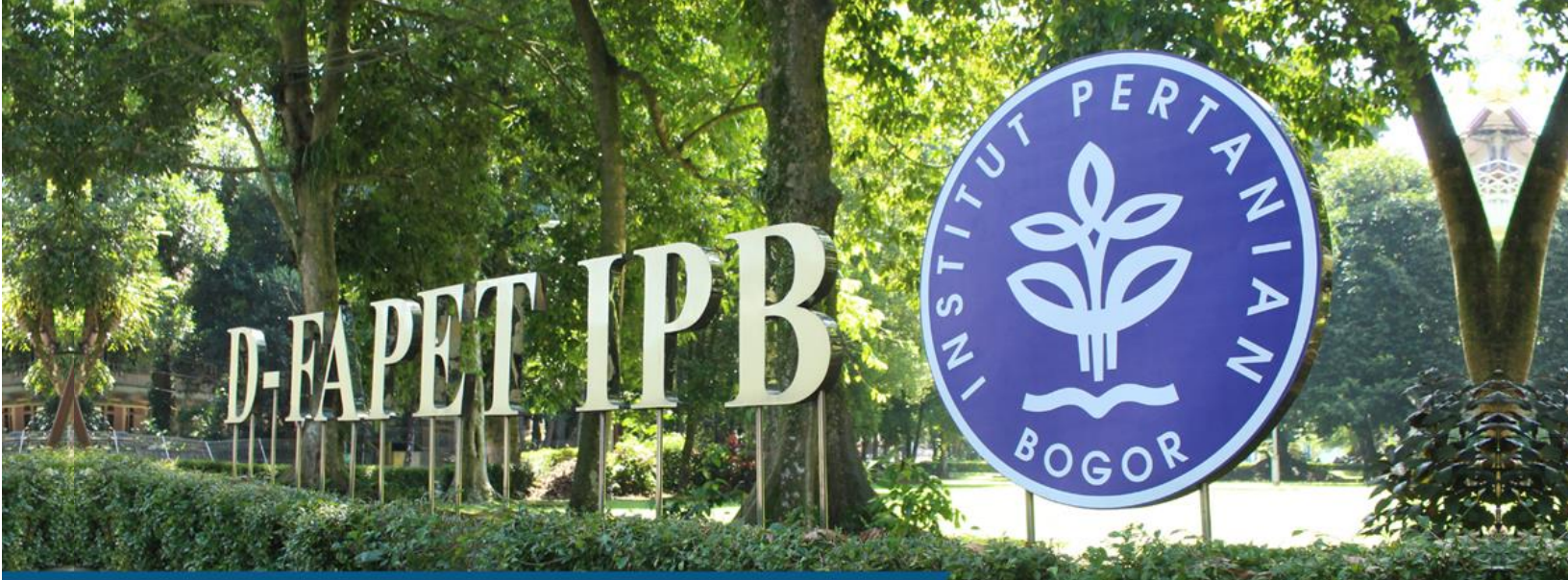

MODULE HANDBOOK

IPB University
Bogor Indonesia

Department of Animal Production Technology
Faculty of Animal Science
IPB University

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TABLE OF CONTENTS

1st SEMESTER

IPB1100 RELIGION

Module designation	Religion Education
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Dr. Hamzah
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 60 minutes x 6 times x 14 weeks = 4780 minutes = 80 hours • Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	1. Skilled in inventorying and analyzing verses of the Qur'an and Sunnah in the PAI Lab 2. Able to show and explain the verses of the Qur'an and Sunnah about science 3. Able to understand human concepts and human relations with religion 4. Able to decipher the 6 Pillars of Iman (Faith) to develop a noble personality 5. Able to demonstrate mahdhah and muamalah worship 6. Able to accustom noble behavior (morals) in the community environment.

Content	Religion Education course is taught in order to equip students with insight in Islamic knowledge comprehensively (broadly and deeply), encourage students to study, study and live the verses of Allah SWT (Qauliyah and Kauniyah) and not to be dichotomous and to give an understanding of human nature who need a guide to life (al Islam), both individually and socially in order to achieve happiness in this world and the afterlife.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)
Reading list	Mandatory Reading: Al-Qur'an and Translations, Islamic Religious Education Guidebook compiled by TIM PAI-IPB Additional Readings: 1. Miftah Faridz, 1999. Pokok-pokok ajaran Islam karya Mifta Faridz, Penerbit Pustaka. Jakarta 2. Yunahar Ilyas.1999. Kuliah Akhlak. LIPPI 3. Yusuf Qardhawy, 1997. Pengantar Kajian Islam (terjmhan.). Pustaka Kautsar. Jakarta. 4. Hamzah Yaqub, 1996. Etika Islam. CV. Diponegoro. Bandung 5. Yunahar Ilyas.2002. Kuliah Aqidah Islam. LPDI UMY. 6. Yusuf Qardhawy.1996. Tahuhid dan Fenomena Kemusyrikan (terjmhn). Pustaka Progresif. Surabaya 7. Shalih bin Fauzan. 1999. Kitab Tauhid I (terjemahan). Darul Haq. Jakarta. Ismail Fauzi. Al- Islam dan Ilmu Pengetahuan

IPB1106 INDONESIAN LANGUAGE

Module designation	Indonesian Language
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours Exam: 120 minutes x 2 times = 240 minutes = 4 hours Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	Student is able to understand and choose the right Indonesian vocabulary; skilled at writing papers according to their competencies; communicate verbally well; proud to speak Bahasa as the basis for applying the field of science according to its competence
Content	Indonesian Language course includes in general subjects. This course is expected to shape the personality of students who are ethical, cultured in Indonesia, and proud of Indonesian language. The material provided in this course is history, position and function of Indonesian language, spelling (letter and punctuation), terminology, effective sentences: diction and reasoning, paragraphs, type of writing (description, narration, exposition, argumentation, and persuasion), reproduction: summary, abstract, or synthesis, quotation, reference system,

	and bibliography, writing scientific papers, and oral presentation techniques.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)

IPB1106 SPORT AND ARTS

Module designation	**Indonesian Language**
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Lecturer team
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	Lecture class: 50 minutes x 1 sch x 14 weeks = 11.6 minutes = 12 hours Discussion class: 60 minutes x 1 sch x 14 weeks = 840 minutes = 14 hours Exam: 120 minutes x 2 times = 240 minutes = 4 hours Self-study: 30 minutes x 2 times x 14 weeks = 840 minutes = 15 hours Total: 2700 minutes = 45 hours
Credit points	1 SCH x (1.6) = 1.6 ECTS

Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	After taking this course, students will have new insights about the entrepreneurial potential and be motivated to develop themselves and be able to change the way of thinking in developing the entrepreneurial spirit.
Content	Students will be able to explain the role and importance of entrepreneurship which includes: (1) explaining the importance of entrepreneurship education; (2) mention and explain the category of entrepreneurs.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	Cognitive: Midterm exam, Final exam, Quizzes, Assignments Psychomotor: Practice Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)

FIS1004 PHYSICAL SCIENCE AND TECHNOLOGY

Module designation	**Physics**
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Dr. Setianto Triwahyudi
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion

Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 60 minutes x 6 times x 14 weeks = 4780 minutes = 80 hours • Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	Student is able to use various physical formulations inthe scope of solving simple physics problems and applying them to other fields.
Content	This course is taught to provide students with insight into the scope of mechanics, vibration waves, dynamics, electricity, electromagnetism and modern physics as well as providing a basis that is suitable for studentswho need basic physics.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)

IPB1113 SMART AGRICULTURE

Module designation	Introduction to Agricultural Science
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Prof. Dr. Ir. Hadi Susilo Arifin, M.S. (Koordinaotor) Prof. Dr. Ir. Kukuh Murtilaksono, M.S. Prof. Dr. Ir. Ahmad Sulaeman, M.S. Dr. Ir. Budi Setiawan, M.S. Prof. Dr. Ir. I. Komang Gede Wiryawan Prof. Dr. Ir. Didi Sopandie, M.Agr. Dr. Ir. Sugeng Santoso, M.Agr" Dr. drh. Ligaya ITA Tumbelaka, SpMP., M.Sc Dr. Ir. Tania June, M.Sc Dr. drh. Koekoeh Santoso
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours • Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	After taking this course, students is able to explain agriculture in a broad sense and the supporting sciences.
Content	This course is designed and structured to take IPB University students to the world of agriculture in abroad sense.

Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)
Reading list	AHN: Buku PIP Author AHN (Book 1-Soft File) KM: Buku Kumpulan Makalah (Book 2-Soft File) TGM: Buku Tantangan Generasi Muda (Hard File)

EKO1101 ECONOMICS

Module designation	**Economics**
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Lecturer team
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS

Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	After attending this course, student is able to understand of economics as a branch of science, understand the behavior of households, companies and markets in economic decision making, understand macroeconomics, problems and the actual conditions of Indonesian macroeconomics.
Content	This course is designed to provide a general overview of Indonesian economics and economics.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)
Reading list	Books for lecture class: Lipsey. R. G., P. O Steiner, and D. D. Purpis. 1987. Economics. Harper International Edition. Books for practical class: Penuntun Responsi Ekonomi Umum. 2013.Departemen Ilmu Ekonomi (IE), Fakultas Ekonomi dan Manajemen (FEM). IPB. Lipsey. R. G., P. O Steiner, and D. D. Purpis. 1987. Economics. Harper International Edition. 3 Gregory, M. 2006. Principles of Economics (Pengantar Ekonomi Mikro) Edisi 3. Salemba Empat.

MAT1102 MATHEMATICS AND LOGICAL THINKING

Module designation	Fundamentals of Mathematics
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Windiani Erliana, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 60 minutes x 6 times x 14 weeks = 4780 minutes = 80 hours • Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	1. Student is able to explain basic mathematical concepts (interval, inequality and absolute value; function; limit and continuous function; derivative; integral; matrix; and system of linear equations). 2. Able to use basic mathematical techniques to solve simple mathematical problems. 3. 3) Able to apply basic mathematical concepts and techniques to solve applied problems.
Content	This course discusses the basic concepts of mathematics which include concepts of inequality and absolute value, function and model, limit and continuous function, derivative, integral, matrix and system of linear equations with more emphasis onaspects of calculation.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments

Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
	Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)
Reading list	1. Tim Penulis. Diktat Kuliah Landasan Matematika. Departemen Matematika FMIPA IPB, Bogor, 2017. 2. Varberg D, Purcell EJ, Rigdon SE. 2011. Kalkulus. Ed ke-9. Jilid 1. Susila IN, penerjemah. Jakarta (ID): Penerbit Erlangga. Terjemahan dari: Calculus. 9th Ed. 3. Stewart J. 2002. Kalkulus. Ed ke-4. Jilid 1. Susila IN, Gunawan H, penerjemah. Jakarta (ID): Penerbit Erlangga. Terjemahan dari: Calculus. 4th Ed.

KPM1131 SOCIOLOGY

Module designation	**Sociology**
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours

	• Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.6 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	After attending this course student is able to understand the concepts, analyze situations and social changes in society, and identify social realities and problems at the level of groups, organizations, institutions, communities, and global by considering power and authority, ecology and gender. In addition,student is able to conduct sociological studies, communicate the results of studies for decision making based on qualitative and quantitative approaches that can be accounted for.
Content	After attending this course student is able to understand the concepts, analyze situations and social changes in society, and identify social realities and problems at the level of groups, organizations, institutions, communities, and global by considering power and authority, ecology and gender. In addition,student is able to conduct sociological studies, communicate the results of studies for decision making based on qualitative and quantitativeapproaches that can be accounted for.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance,

	active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)

2nd SEMESTER

BIO1102 FUNDAMENTAL OF BIOLOGY

Module designation	Fundamental of Biology
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Dr.dra. Yohana Caecilia Sulistaningsih, M.Si
Language	Indonesian

Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 60 minutes x 6 times x 14 weeks = 4780 minutes = 80 hours • Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	1. Explaining the scope of biology, observe and explain the structure and metabolism of cells. 2. Observing and explaining the basic cellular reproduction and patterns of inheritance. 3. Observing and explaining the structure andexpression of genes, and biotechnology. 4. Observing and explaining the diversity, structureand biological functions of organisms: monera, protists, fungi, plantae, animalia. 5. Observing and explaining the ecology: population, community, and ecosystem and bio conservation.
Content	This course explains the theories and basic principles of biology that form the basis for further courses in the major/department. The lecture begins by explaining the scope of biology and the origins of life, then proceeding to the Midterm Examination, lecturesexplaining the structure and function of biology at thecellular level, genetics and its application in biotechnology. In the next section until the Final Examination, the lecture explains about biodiversity and biological functions at the level of organisms (monera, protists, fungi, plantae, and animalia), population, community, ecosystem, and conservation biology. Examples and the application of each topic are given to help students understand basic principles and theories. This course is equipped with practicum as a

	support of theoretical knowledge provided in lectures. This course is offered in 1st semester (odd) and 2nd semester (even), as well as short semesters (over the year) specifically for repeaters
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)
Reading list	Jane B. Reece, Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Robert B. Jackson. 2014. Campbell Biology.10th. PearsonEducation, Inc. *Neil A. Campbell, Jane B. Reece. 2008.* Biology *8th.* Pearson Benjamin Cummings: San Francisco.

IPB1111 PANCASILA EDUCATION

Module designation	**Pancasila Education**
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Dr. Ir. Didid Diapari MSi (DDP) (Koordinator)
Lecturer	• Prof. Dr Ir Sedarnawati MSc (SYA) • Dr. Ir. Indah Wijayanti (IND.) • Dr. Ir. Sri Rahayu MSi (SRY) • Ir. Ujang Sehabudin Msi (UJS) • Dra. Siti Rahmawati, M.Pd (SRW) • Dr. Ir. Parlaungan Rangkuti (PAR) • Etty Eidman SH (ETE) • Gunter, S.E., M.M (GNT) • Prof. Drh. Ni Wayan Kurnianti Karja, M.P., P.hd • Juang Gema Kartika, S.P., M.Si (JGK) • Dr. Vita Rumanti Kurniawati, S.Pi., M.T (VIT) • Dr. Syafitri Hidayati

	• Dias Indrasti, S.T.P., M.Sc • Fana Dewi Savitri, S.S (FDW)
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 1 sch x 14 weeks = 11.6 minutes = 12 hours • Discussion class: 60 minutes x 1 sch x 14 weeks = 840 minutes = 14 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 30 minutes x 2 times x 14 weeks = 840 minutes = 15 hours • Total: 2700 minutes = 45 hours
Credit points	1 SCH x (1.6) = 1.6 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	• Student is able to explain the meaning and significance: Awareness of national defense, national identity, Pancasila, the 1945 Constitution, as well as development concepts encompassing citizenship and human rights, geopolitics, geostrategy, national development planning (polstranas), democracy, and good governance, regional autonomy, and anti-corruption education. • Student is able to analyse the practice of Pancasila as an ideology, state foundation, and way of life, as well as the implementation of the constitution in resolving various issues faced by Indonesian society, nation, and state. • Student is able to evaluate the impact of the lack of understanding and practice of Pancasila and the constitution by citizens and the nation on the existence of the Unitary State of the Republic of Indonesia (NKRI). (C5)
Content	Indonesian Language course includes in general subjects, including awareness of national defense, national identity, Pancasila as the nation's philosophy, Pancasila as the basis of the

	state and national ideology constitution and the 1945 constitution, the 1945 constitution as amended, Indonesia's geopolitics, Indonesia's geostrategy, national strategic politics, citizenship and human rights, democracy and good governance, regional autonomy and anti-corruption education.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	Assessment of students' achievement using proportion as follow: midterm exam (30%), final exam (30%), practicum (40%).
Reading list	1. Membangun Bela Negara (Parlaungan Adil Rangkuti) 2. UUD 45 Amandemen 3.ALKI

IPB110E CIVICS EDUCATION

Module designation	**Civics Education**
Semester(s) in which the module is taught	1st Semester
Person responsible for the module	Dr. Indah Wijayanti, S.TP, M.Si
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 1 sch x 14 weeks = 11.6 minutes = 12 hours • Discussion class: 60 minutes x 1 sch x 14 weeks = 840 minutes = 14 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours Self-study: 30 minutes x 2 times x 14 weeks = 840 minutes = 15 hours • Total: 2700 minutes = 45 hours
Credit points	1 SCH x (1.6) = 1.6 ECTS

Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	1. Students understand the vision, mission and goals of Civics Education. 2. Students identify disturbances and threats to the nation and the Republic of Indonesia and state defense efforts adapted to global challenges. 3. Students is able to analyze the formation of the Republic of Indonesia based on history and elements of the state formation, analyze the concept of national integration. 4. Student is able to explain the meaning of nationalism. 5. Student is able to analyze the importance of the state constitution. 6. Student is able to describe the atmosphere when making the 1945 Constitution. 7. Student is able to explain the meaning of the Preamble of the 1945 Constitution and its relationship with the Proclamation of Independence and the Body 8. Student is able to compare the implementation of the 1945 Constitution from time to time 9. Student is able to analyze and show changes in amendments to the 1945 Constitution, especially in state institutions as executors of people's sovereignty 10. Student is able to explain Pancasila as a system of philosophy and unity of precepts in Pancasila. 11. Student is able to analyze Pancasila as a source of values. 12. Describe the meaning of Pancasila as the basis of the state, comparing Pancasila as an open ideology with other ideologies, and its function as well as a national development paradigm. 13. Student is able to explain the problem of Indonesian citizenship. 14. Student is able to categorize the rights and obligations of Indonesian citizens. 15. Student is able to link the implementation of democracy withthe enforcement of human rights. 16. Analyzing the implementation of democracy in Indonesia since the old order, new order and reform 17. Analyzing the efforts to promote, respect and uphold human rights in Indonesia and the world. 18. Student is able to relate the concept of geopolitics and archipelago insight.

	19. Student is able to explain the concept of Indonesian territory. 20. Student is able to describe the implementation of national insights in national development. 21. Student is able to explain Indonesia's national resilience and implementation 22. Student is able to explain analyzing problems and formulating politics and national strategies. 23. Student is able to explain the principles of good governance in public organizations and state administration. 24. Student is able to explain the implementation of regional autonomy. 25. Student is able to categorize corrupt acts and the importance of effots to prevent corruption.
Content	Civics education gives understanding to students as the next generation to apply the fundamental values of the nation and state of Indonesia in effort to strengthen awareness of national defense, strengthen attitudes and behaviors of citizens, master in knowledge of the basic problems of national and state life, and to be pro-active towards change. That occurs in order to realize the integration of science and technology and development.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)

Reading list	1. Membangun Kesadaran Bela Negara Dr. Ir. Parlaungan Adil Rangkuti,M.Si. IPB Press 2. Paradigma Baru Pendidikan Kewarganegaraan. Winarno,S.Pd, M.Si. PT.Bumi Aksara: 2008 3. Cerdas Kritis dan Aktif Berwarganegara, Pendidikan Kewarganegaraan Untuk Perguruan Tinggi. Heru Herdiawanto,M.Si dan Jumanta Hamdayama,M.Si, Erlangga: 2010 4. Panduan Kuliah Pendidikan Pancasila untuk Perguruan Tinggi. Elly M.Setiadi.M.Si. Gramedia: 2007 5. Pendidikan Kewarganegaraan: Demokrasi, Hak Asasi Manusia, Masyarakat Madani. ICCE UIN dan Prenada Media: 2003

FPT1101 INNOVATIVE FARM

Module designation	**Innovative Farm**
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Prof. Dr. Ir. Dewi Apri Astuti, M.S
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours • Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS

Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	After taking this course, students will have new insights about the entrepreneurial potential and be motivated to develop themselves and be able to change the way of thinking in developing the entrepreneurial spirit.
Content	Students will be able to explain the role and importanceof entrepreneurship which includes: (1) explaining the importance of entrepreneurship education; (2) mention and explain the category of entrepreneurs.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)

COM1100 COMPUTATIONAL THINKING

Module designation	**Computational Thinking**
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Dean Apriana Ramadhan, S.Kom, M.Kom
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion

Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	Student has the ability to analyze problems and seek solutions using a computational thinking approach. Students possess knowledge of computational tools that can be utilized to address issues. Students understand the ethical considerations in the use of various computational tools for problem-solving.
Content	This course explains the process of problem formulation, focusing on essential information into generic solutions (abstraction), problem-solving involving breaking down problems into smaller subproblems (decomposition), identifying patterns in a problem (pattern matching), and constructing structured solution steps (algorithms). The course cultivates students' thinking patterns in expressing solutions in a series of structured steps that can be facilitated by computational technology. After completing this course, students are expected to apply problem-solving methods through computational thinking.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%).

Reading List	1. David Riley, Kenny A. Hun. 2014. **Computational Thinking for the Modern Problem Solver**. Chapman & Hall. 2. Paul Curzon, Peter W McOwan. 2017. **The Power of Computational Thinking. Games, Magic and Puzzles to Help You Become a Computational Thinker**. World Scientific. 3. Karl Beeche. 2017. **Computational Thinking: A beginner's guide to problem-solving and programming.** BCS, The Chartered Institute for IT. 4. George Beekman, Ben Beekman. 2012. **Digital Planet: Tomorrow's Technology and You 10e**. Pearson. 5. V. Anton Spraul. 2012. **Think Like a Programmer: An Introduction to Creative Problem Solving**. No Starch Press. 6. Eric Freemen. 2018. **Head First Learn to Code: A Learner's Guide to Coding and Computational Thinking**. O'Reilly Media

KIM1014 CHEMISTRY SCIENCE AND TECHNOLOGY

Module designation	**Chemistry**
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Dr. Trivadila, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 60 minutes x 6 times x 14 weeks = 4780 minutes = 80 hours • Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS

Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	1. After taking this course, students will be able to explain the chemical linkages in life processes related to aspects of daily life. 2. After attending this lecture, students will be ableto explain the relationship between chemistry and life, physical and chemical properties, and atoms as basic components of elements, compounds formed from elements, mixtures, pure and impure materials, and periodic tables.
Content	Look at the world of atoms and molecules:understanding the language of chemistry.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)
Reading list	Suchocki J. 2007. *Conceptual Chemistry: Understanding Our World of Atoms and Molecules*.Ed. Ke-3. San Fransisco (US): Pearson Benjamin Cummings.

STA1111 STATISTICAL DATA AND ANALYSIS

Module designation	**Statistical Data and Analysis**

Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	
Language	Indonesian
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	Lecture class: 50 minutes x 1 sch x 14 weeks = 700 minutes = 12 hours Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours Exam: 120 minutes x 2 times = 240 minutes = 4 hours Self-study: 60 minutes x 6 times x 14 weeks = 4780 minutes = 80 hours Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	Student is able to critically assess the quality of data based on its collection process. Students possess basic data management skills to produce valid information. Students have the ability to generate and interpret general information from data according to the context of the problem. Students are capable of producing effective visualization materials.
Content	The course includes statistics and analytics for decision making, data understanding: description and exploration, modelling: correlation and regression, data gathering/collection methods: quantitative research, introduction to data management, data visualization
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%).

Reading list	• Agresti A, Franklin C, Kingenberg B. 2018. Statistics: the art and science of learning from data. Pearson – Harlow, England. • Moore DS, McCabe GP, Craig BA. 2014. Introduction to the Practice of Statistics. WH Freeman and Company – New York, USA.

IPB110F ENGLISH

Module designation	**English**
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Dra. Alfa Chanasah, M.A
Language	English
Relation to curriculum	Common Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours

	• Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	1. Able to applying "reading skills" in understanding texts in English; 2. Knowing the structure of language to support understanding of texts in English;
Content	This course is designed and structured to guide IPB University students so they can face the era of globalization with sufficient English language. The topics discussed are knowledge of grammar and reading techniques that are very useful such as: skimming, scanning, guessing meanings from context, text organization and transferring information.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	*Cognitive:* Midterm exam, Final exam, Quizzes, Assignments *Psychomotor:* Practice *Affective:* Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort. Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)
Reading list	1. Abdulaziz, Helen Taylor, & Alfred D. Stover. 1980. Academic Challenges in Reading. Prentice-Hall, Inc.Englewood Cliffs, N.J. 2. Anson M. Chris, Schwegler A. Robert. 2001. The Longman Handbook for Writers and Readers, An Imprint of Addision Wesley Longman, Inc. 3. Dobbs, Carrie. 1989. Reading for a Reason. Prentice Hall Regents Englewood Cliffs, N.J. 4. Feverstein, Tamar and Miriam S. 1995. Enhancing Reading Comprehension in the Language Learning

Clasroom. Alta Book Center Pub. San Fransisco, California.
5. Grellet, Francois. 1981. A Practical Guide to Reading Comprehension Exercises. Cambridge University Press.
6. Hornby, A.S. 1991. Oxford Advanced Learner's Dictionary. Oxford UP.
7. Karen Blanchard et.al. 1997. For Your Information 3. Longman.
8. Kranhlee, Karl. 1976. Reading Together: A Reading Activities Text. St. Martin Press.
9. Labarca. Angela and James M. Hendrickson. 1984. Our Global Village. Harcourt Brace Jovanovichy, Inc.
10. Latulippe, L.D. 1987. Developing Academic Reading Skills. Prentice Hall Regents, Englewood Cliffs, N.J.
11. Maingay, S. 1983. Making Sense of Reading: an Introduction to Reading Skills in English. Australia Nelson.
12. Marcelino, M. 1999. Materials for Foundations of Academic Writing Course. AMINEF, Jakarta.
13. Mickulecky, Beatrice S. 2004. More Reading Power, Reading for Pleasure, Comprehension Skills, Thinking Skills, Reading Faster. Pearson Education, Inc.
14. Oshima, Alice, and Ann Hogue. 1999. Writing Academic English. Longman.
15. Praninkas, Jean. 1975. Rapid Review of English Grammar. Prentice Hall.
16. Rowland, Black S. and Lisa Rosenthal. 1986. Academic English and Study Skills for International Students. Prentice Hall. N.J.
17. Skykes, J.B. 1989. The Concise Oxford Dictionary. Oxford UP.
18. The British Council. 1979. Reading and Thinking: Exploring Functions. Oxford UP.
19. Torres G, Eunice. Smith L. Michael. English for Fisheries Technology. National Bookstore, Inc.
20. Valerie Kay. 1985. Biological Sciences "Developing Reading Skill in English". Pergamon Press.
21. Woods, Enid Nolan and David Foll. 1986. Penguin Advanced Reading Skills. Penguin Book Ltd. England.

3th SEMESTER

TPT1101 PRINCIPLE OF ANIMAL PRODUCTION

Module designation	Principle of Animal Production
Semester(s) in which the module is taught	3rd Semester
Person responsible for the module	M. Baihaqi, S.Pt, M.Sc
Lecturer	Dr. Afton Attabany, Dr. Rudi Afnan, Edit L Aditia, M.Sc
Language	Indonesian
Relation to curriculum	Academic Core Courses
Teaching methods	Contextual Learning, Cooperative Learning, Discussion
Workload (inc. Contact hours, self- study hours)	Lecture class: 50 minutes x 1 sch x 14 weeks = 700 minutes = 12 hours Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours Exam: 120 minutes x 2 times = 240 minutes = 4 hours Self-study: 60 minutes x 6 times x 14 weeks = 4780 minutes = 80 hours Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	Student is able to explain and understand the principles of livestock production. Student is able to understand the meaning of livestock, the functions of different types of livestock, and breeds of livestock. Student is able to identify the framework, composition of livestock, growth and development, lactation physiology, digestive system, reproductive system, technical coefficients of production, and reproduction in livestock. Studen tis able to apply expertise independently and professionally and adapting to the situations encountered. Studen tis able to communicate effectively about livestock farming management, critical thinking, being responsible, and working in teams

Content	The course include explaining the definition and basic scope of livestock production as well as the importance of livestock production for humans, capable of explaining the basic principles of animal genetics, the basic principles of animal husbandry/environmental management, the basic principles of animal growth, differences in the digestive system, reproduction, and lactation physiology processes between ruminant and pseudo-ruminant livestock, development, skeletal and muscular systems, digestion, and reproduction in monogastric/pseudo-ruminant livestock, extracting insights on the definition and benefits of poultry, domestication of poultry, development of modern hybrid poultry and native/local Indonesian poultry, as well as their potential, and explaining the characteristics of poultry, poultry health, sex determination, poultry reproduction/egg formation.
Examination forms	Midterm exam, Final exam, Quizzes, Assignments
Study and examination requirements	Assessment of students' achievement using proportion as follow: midterm exam (35%), final exam (35%), practicum (30%). The proportion of practicum score consists of report (50%), quiz (15%), attendance (10%), and practicum examination (25%)

TPT1102 ANIMAL FUNCTIONAL AND BIOLOGY

Module designation	**Animal Functional and Biology**
Semester(s) in which the module is taught	3rd Semester
Person responsible for the module	Prof Dr Ir Niken Ulupi, MS (Koordinator)
Lecture	M Baihaqi SPt MSc Dr drh Aryani Sismin Satyaningtyas, MSc
Language	Indonesian
Relation to curriculum	Academic Core Course
Teaching methods	Contextual Learning, Cooperative Learning, Discussion

Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	Student is able to elucidating the body's homeostasis system. Student is able to differentiating the body's organ systems, as well as their biological mechanisms. Student is able to analyzing the interrelation between livestock environments and the occurring biotransformation processes
Content	The course Animal Functional and Biology includes some subjects (1) biotransformation processes in the body's homeostasis system and analyzing their correlation with the environment, (2) the circulatory system and differentiating the organs involved, (3) the functions and mechanisms of the circulatory organs (heart and blood), (4) the immune system and its organs, (5) the mechanisms of immune organ function, (6) differentiating the differences in body covering organs and their functions, (7) the differences in types and functions of livestock skeletal structures, (8) the types and functions of muscles, (9) the types and functions of monogastric and ruminant livestock digestive organs, (10) the functions and mechanisms of excretory organs, (11) the differences in functions and mechanisms of respiratory organs, (12) the functions and mechanisms of the nervous system, (13) the performance of endocrine organs, (14) the differences and functions of male and female reproductive organs in monogastric and ruminant livestock.
Examination forms	

Study and examination requirements	Assessment of students' achievement using proportion as follow: midterm exam (30%), final exam (30%), practicum (40%). The proportion of practicum score consists of report (10%), midterm presentation (10%), final report (10%), and final presentation.
Reading list	1. Donham RS dan Haase E. 1980. *Hormones and Domestication*. Avian Endocrinology Ed.: A. Epple and M.H. Stetson. 2. Ganong WF. 2008. *Buku Ajar Fisiologi Kedokteran*. Ed 22. Terjemahan. Jakarta. Penerbit Buku Kedokteran EGC. 3. Sastradipraja D, Sri Hartini SS, Reviany W, Tonny U, Achmad M, Hamdani N, Regina S, Razak H. 1989. *Penuntun Praktikum Fisiologi Veteriner*. Bogor. Pusat Antar Universitas Ilmu Hayat IPB. 4. Scanes CG, Brant G. dan Ensminger ME. 2004. *Poultry Scince*. 4th Ed. New Jersey. Pearson Prentice Hall 5. Squires EJ. 2003. *Applied Animal Endocrinology*. Wallingford, Oxon. CABI Publishing.. 6. Sturkie PD. 1976. *Avian Physiology*. 3rd Ed. New York. Springer-Verlag 7. Wibawan IWT, Retno DS. 2013. *Intisari Imunologi Medis*. Fakultas kedokteran Hewan IPB. Bogor.

TPT1201 ANIMAL BEHAVIOR AND WELFARE

Module Name	**Animal Behavior and Welfare**
Semester(s) in which the module is taught	3rd Semester
Person responsible for the module	Prof. Dr. Ir. Iman Rahayu HS
Lecturer	Team Teaching from Department of Animal Production Technology
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester

Module Name	Animal Behavior and Welfare
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours • Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to master applicable poultry behavior 2. Able to master the concepts of 5F, 3R, and bioethics in poultry 3. Able to explain knowledge and apply behavior management of large ruminants (beef cattle, dairy cows, buffalo) and small ruminants (sheep, goats, rabbits), as well as horses, deer and pigs.
Content	This course is discuss about domestication, animal welfare and bioethics, poultry behavior, poultry welfare, 5F and 3R concept and poultry bioethics, behavior and welfare concept for research, behavior management of large ruminants (cattle, cows, stiff), behavior management of small ruminants (sheep, goat, rabbit), behavior management of horses, deer, and pig
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and presentation

TPT1211 DAIRY PRODUCTION

Module Name	Dairy Production
Semester(s) in which the module is taught	3rd Semester
Person responsible for the module	Dr. Ir. Afton Atabany
Lecturer	Dr. Ir. Bagus P. Purwanto, M.Agr Iyep Komala, S.Pt, M.Si.
Language	Indonesian

Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to identify and make an inventory of Feeding (concentrate and forage feed and its provision) in dairy livestock 2. Able to explain and apply the maintenance management of lactating and non-lactating dairy cattle 3. Able to explain the productivity and production of milk in dairy livestock 4. Able to explain about the factors that affect the quality of milk in dairy cattle
Content	This course is offered knowledge for student to capable explain and understand the technology production and maintain dairy cows based on the composition and animal status, dairy cows judging, recording programme and estimation of milk production, selection method of dairy cows, planning for dairy cows entrepreunership
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Freddie L. Barnard, John C. Foltz, Elizabeth A. Yeager. 2016. Agribusiness Management (Routledge Textbooks in Environmental and Agricultural Economics). 5th Ed. Routledge 2. Nicholas Kalaitzandonakes, Elias G. Carayannis, Evangelos Grigoroudis, Stelios Rozakis (Eds.). 2018. From Agriscience to Agribusiness: Theories, Policies and

	Practices in Technology Transfer and Commercialization (Innovation, Technology, and Knowledge Management). 1st Ed. Kindle Edition. Springer 3. Siswanto Imam Santosa, Agus Setiadi, dan Ratih Wulandari. 2013. Analisis Potensi Pengembangan Usaha Peternakan Sapi Perah dengan Menggunakan Paradigma Agribisnis di Kecamatan Musuk Kabupaten Boyolali. Buletin Peternakan 37(2): 125-135 4. Ronald Kay, William Edwards, Patricia Duffy. 2015. Farm Management. 8th Ed. McGraw-Hill 5. Garry Stephenson. 2019. Whole Farm Management: From Start-Up to Sustainability. Storey Publishing

TPT1222 PIG AND HORSE PRODUCTION

Module Name	**Pig and Horse Production**
Semester(s) in which the module is taught	3rd Semester
Person responsible for the module	Dr. Yuni Cahya Endrawati, S.Pt., M.Si.
Lecturer	1. Ir. Salundik, M.Si. 2. M. Baihaqi, S.Pt., M.Sc. 3. Dr. Amrozi
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	● Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours ● Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours ● Exam : 120 minutes x 2 times = 240 minutes = 4 hours ● Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Understand and explain the basic concepts of hog and horse production 2. Identify problems in pig and horse production 3. Describe alternative solutions to problems in the production of pigs and horses

Content	This course is offered knowledge about pig and horse development in Indonesia. Matting procedure, effected factors of gestation, procedure of lactation period pre and post weaning, ewe and mare replacement stock, feed formulation and feeding management, building for swine and horses
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Devendra, C and M.F. Fuller. 1979. Pig Production in The Tropis. Oxford University Press 2. Edwards, E. H. 2002. Horses. Dorling Kindersley Limited. London 3. Edwards, E. H. 2008. The Encyclopedia of The Horse. Dorling Kindersley Limited. London 4. Siagian, P. H. 2000. Budidaya Ternak Babi. Diktat Kuliah 5. Siagian, P. H. 2000. Budidaya Ternak Babi. Penuntun Praktikum 6. Sihombing, D.T.H. 1992. Ilmu Ternak Babi. UGM Press. Yogyakarya

TPT1231 COMMERCIAL POULTRY PRODUCTION

Module Name	**Commercial Poultry Production**
Semester(s) in which the module is taught	3rdSemester
Person responsible for the module	Prof. Dr. Ir. Iman Rahayu HS, MS
Lecturer	Dr. Maria Ulfah, S.Pt., M.Sc.Agr
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	● Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours ● Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours ● Exam : 120 minutes x 2 times = 240 minutes = 4 hours ● Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to	1. Registered in this course

the examination regulation	2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to master commercial broiler farming techniques 2. Able to master commercial laying poultry farming techniques 3. Able to master the factors of commercial poultry production 4. Able to master biosecurity, health, disease and prevention aspects
Content	This course is discuss about commercial poultry management (broiler, layer, local chicken, and local duck) included environmental aspect, feeding management and drinking management, health management, egg metabolism process and evaluate the performance of poultry product
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation

4th SEMESTER

TPT1202 BUILDING AND EQUIPMENT OF ANIMAL PRODUCTION

Module Name	Building and Equipment of Animal Production
Semester(s) in which the module is taught	4th Semester
Person responsible for the module	Dr. Ahmad Yani, S.TP., M.Si.
Lecturer	Dr. Ir. Niken Ulupi, MS Iyep Komala, S.Pt., M.Si. Muhamad Baihaqi, S.Pt., M.Sc.
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommendedprerequisites	-
Module objectives/intended learning outcome	1. Able to inventory the functions and conditions of a comfortable housing for ruminants and poultry 2. Able to calculate the ventilation requirements for livestock production and the equipment needed 3. Able to compare open and closed housing systems 4. Able to design housing buildings in accordance with the micro climate of the region
Content	This course is explain about housing and equipment border for animal production, composed material of animal production housing, tropical highland and lowland barn design, cost estimation of barn, principle and mechanism of equipment based on the movement, vibration, dynamic fluida, and electromagnetics
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point

	presentation
Reading list	1. Bell DD, Weaver WD. 2001. Commercial Chicken Meat and Egg Production. 5th Ed. Springer. USA 2. Nesheim MC, Austic RE, Card LE. 1979. Poultry Production. 12th Ed. Lea & Febiger. Philadelphia 3. Devendra, C. anda Marca Burns,1983. Goat Production in the Tropics Common Wealth Agricultural Bureaux. Malaysia. 4. Ensminger M.E 1970. Sheep and Wool Sience. 4 th ED. The Interstate Printers and Publishers. Inc. Illionis. 5. Gatenby M.R.1986. Sheep Production in the Tropics and Sub Tropics. Longman Singapore Publishers Ltd. Singapore 6. Johnston. R.G. 1983. Introduction to Sheep Farming. Granada Publishers. Sidney. 7. Ronald Kay, William Edwards, Patricia Duffy. 2015. Farm Management. 8th Ed. McGraw-Hill

TPT1224 PROSPECTIVE ANIMAL PRODUCTION

Module Name	**Prospective Animal Production**
Semester(s) in which the module is taught	4th Semester
Person responsible for the module	Dr. Yuni Cahya Endrawati, S.Pt., M.Si.
Lecturer	Prof. Dr. Ir. Asnath Maria Fuah, MS Dr. Ir. Salundik, M.Si
Language	Indonesian
Relation to curriculum	Study Program in Dept Core
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	● Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours ● Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours ● Exam : 120 minutes x 2 times = 240 minutes = 4 hours ● Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-

Module objectives/intended learning outcome	1. Students are able to explain biological characteristics and manipulate the behavior of hope animals that determine their cultivation / production techniques. 2. Able to apply their expertise in producing zero waste wildlife based on local resources and handling post-harvest products. 3. Able to make and analyze the feasibility of the hope animal cultivation 4. Able to select hope animals that are suitable to be developed into livestock commodities in terms of the economy, environment and socio-culture of Indonesia
Content	This course is offered knowledge and understanding about prospective animal (snail, earth worm, cricket, cockcroach, honey bee, silk worm), basic principle of zero waste production technology and conservation principle, post harvest management and kind of prospective animal product which is has value added, visibility analysis, and developmental potency of prospective animal
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Breen, J. F. 1974. *Encyclopedia of Reptiles and Amphibians.* T.F.H. Publications, Inc. Ltd, Hongkong 2. Catalan, G. I. 1981. *Earthworm A New-Resources of Protein*. Philippine Earthworm Center, Philippine 3. Cresswell, D. C. and I. P. Kompiang. 1980. *Studies on snail meal as a protein source for chicks. I. Chemical composition, metabolizable energy and feeding value for broiler.* Poultry Sci. 60 (8):1854-1860. 4. *Explore The World of Earthworms*. Inseat Lecture Hall, UPLB College, Laguna 5. Holland, W. J. 1955. *The Butterfly Book. Revised Edition*. Doubleday and Co. Inc., New York. 6. Julivert, A. 1995. Pesona Dunia Kupu-Kupu dan Ngengat. Elex Media Komputindo, Jakarta. 7. Klots, A. B. 1958. *The World of Butterlflies and Moths.* George G. Harrap and Co. Ltd., London. 8. Nanao, J. dan H. Oda. 1996. Siput. Elex Media Komputindo, Jakarta. 9. Rukmana, R. 1999. Budidaya Cacing Tanah. Penerbit Kanisius, Yogyakarta.

	10. Sihombing, D.T.H. 1997. Ilmu Ternak Lebah Madu. Gadjah Mada University Press. Yogyakarta 11. Sihombing, D.T.H. 2000. Satwa Harapan I. Pustaka Wirausaha Muda. Bogor 12. Sihombing, D.T.H. 2003. Satwa Harapan II. Pustaka Wirausaha Muda. Bogor 13. Sihombing, D.T.H. 2003. Satwa Harapan III. Pustaka Wirausaha Muda. Bogor 14. Tim Penulis PS. 1991. Budidaya dan Prospek Bisnis Bekicot. Penebar Swadaya, Jakarta. 15. Tim Penulis PS. 1995. Budidaya Ulat Sutera. Penebar Swadaya, Jakarta. 16. Tjiptowiyono, A. 1995. Pengaruh penggunaan bahan pengempuk daging alami terhadap mutu organoleptik, kimia dan fisik keong mas (*Pomacea sp*). Skripsi. Fakultas Perikanan Institut Pertanian Bogor, Bogor. 17. Wangsadimiarta, A. dan Wibowo BSc. 1963. Pedoman Pemeliharaan Ulat Sutera dan Pengolahan Hasilnya. Arena Tekstil. 18. Hotnida C.H. Siregar, dkk. 2011. Propolis Madu Multikhasiat. Penebar Swadaya. Jakarta 19. Dedy Duryadi S., dkk. 2010. Budidaya Ulat Sutera Liar Attacus atlas. Penebar Swadaya. Jakarta.

TPT1233 DIVERSITY OF ANIMAL HOBIES

Module designation	**Animal Functional and Biology**
Semester(s) in which the module is taught	3rd Semester
Person responsible for the module	Dr. Maria Ulfah
Lecture	Muhammad Baihaqi, S.Pt, M.Sc, Dr. Sri Darwati
Language	Indonesian
Relation to curriculum	Study Program in Dept Core
Teaching methods	Contextual Learning, Cooperative Learning, Discussion

Workload (inc. Contact hours, self- study hours)	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS
Required and recommended prerequisites for joining the module	1. Registered in this course 2. Minimum 80% attendance in this course
Module objectives/intended learning outcomes	Student is able to understand the definition, scope, objectives, and concept of utilizing diversity in hobby livestock. Student is able to understand and analyze the characteristics of hobby livestock. Student is able to understand and analyze the management of hobby livestock breeding. Student is able to understand and analyze the threats to the diversity of hobby livestock, legislation/regulations related to sustainable utilization of hobby livestock, and efforts to conserve hobby livestock.
Content	The subject of the course include (1) the scope, objectives, and concept of diversity in hobby livestock, (2) threats, legislation/regulations, and conservation efforts for hobby livestock, (3) the types and characteristics of ornamental poultry and birds, as well as songbirds, as hobby livestock, including their breeding management, (4) the types and characteristics of racing pigeons as hobby livestock, including their breeding management, (5) the types and characteristics of small ruminants and various other livestock as hobby livestock, including their breeding management, (6) the types and characteristics of large ruminants and horses as hobby livestock, as well as their breeding management, (7) the latest trends in the utilization of hobby livestock in society, as well as their breeding management
Examination forms	

Study and examination requirements	Assessment of students' achievement using proportion as follow: midterm exam (25%), final exam (25%), active participation (10%), project based learning (20%), assignment (10%), Quiz (10%)
Reading list	FAO. 2015. *The Second Report on the State of the World's Animal Genetic Resources for Food and Agriculture*, edited by B.D. Scherf & D. Pilling. FAO Commission on Genetic Resources for Food and Agriculture Assessments. Rome. http://www.fao.org/3/a-i4787e/index.html CBD, 1992. *Convention on Biological Diversity. Secretariat of the Convention on Biological Biodiversity*. Canada: Montreal. http://www.biodiv.org. [IUCN] International Union for Conservation of Nature. 2018: The IUCN Red List of Threatened Species. Version 2017-3. www.iucnredlist.org <http://www.iucnredlist.org/. Sartika T. Iskandar S. 2007. *Mengenal Plasma Nutfah Ayam Indonesia dan Pemanfaatannya.* Bogor (ID): Balai Penelitian ternak. Pusat Penelitian dan Pengembangan Peternakan. Badan Penelitian dan Pengembangan Pertanian.

TPT1221 RUMINANT PRODUCTION

Module Name	**Ruminant Production**
Semester(s) in which the module is taught	4thSemester
Person responsible for the module	Prof Dr Ir Rudy Priyanto
Lecturer	Dr Ir Henny Nuraini, MSi Dr Ir Komariah, MSi Edit Lesa A, SPt, MSc Bramada W.P, SPt, MSi
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	● Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours ● Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours ● Exam : 120 minutes x 2 times = 240 minutes = 4 hours ● Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours

	Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to understand the potential, prospects of meat ruminant farms in Indonesia and be able to explain the meat ruminant production system in Indonesia, the meat ruminant selection and mating system 2. Able to understand the buildings and housing of meat ruminants, to understand the evaluation of feeder livestock for seeds and fattening 3. Able to understand the management of parent, male and child maintenance and be able to understand feedlot management 4. Able to implement livestock health handling, livestock transportation to marketing 5. Able to evaluate ready-to-slaughter livestock
Content	This course is discuss about potency and prospect of cattle and meat in Indonesia, matting system and selection, evaluation system for replacement stock, cattle production system, maintain management of cattle, building and equipment of cattle, cattle health handling, feedlot management and evaluation, also market of cattle meat
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	Bogart R, Taylor RE. 1992. Scientific Farm Animal. New York :Mcmillan Publishing.Co Boyles S, Flacoli T, Ringwali K. 1992. The FeederCalf Grading System. North Dakota State. University Agriculture and University Extension Briggs HM, Brigg DM, 2005. Modern Breed of Livestock. Fourth Edition. Mcmillan Publishing.Co Buhman M, Dewell G, Griffin D. 2005. Biosecurity Basics for Cattle Operation and Good Management Practises (GMP) for Controlling Infectious Deseases. University of Nebrasca-Lincoln Extension Cleere J, Gill R, Dement A.2008. Biosecurityfor Beef Cattle Operations. AgriLifeExtension. The Texas A&M System

	Departemen Pertanian. 2001. Beberapa Penyakit pada Ternak Ruminansia: Pencegahan dan Pengobatannya. Mataram (ID): Badan Penelitian dan Pengembangan Pertanian, Balai Pengkajian Teknologi Pertanian (BPTP) Departemen Pertanian. 2007. Petunjuk Teknis Perkandangan Sapi Potong. Pusat Penelitian dan Pengembangan Peternakan, Deprtemen Pertanian, Grati. Departement of Primary Industries. 1994. Designing Better Feedlot. Watts P, Tucker R. Brisbane: State of Queensland Departement of Primary Industries. Devendra, C. anda Marca Burns,1983. Goat Production in the Tropics Common Wealth Agricultural Bureaux. Malaysia. Direktorat Jenderal Peternakan. 2000. Pedoman Budidaya Ternak Sapi Potong yang Baik (Good Farming Practise) Jakarta (ID): Departemen Pertanian Ensminger ME. 1987. Beef Cattle Science.6th Ed. The Interstate Printers & Publisher, Inc. Danville, Illinois. Ensminger M.E 1970. Sheep and Wool Sience. 4 th ED. The Interstate Printers and Publishers. Inc. Illionis. Gatenby M.R.1986. Sheep Production in the Tropics and Sub Tropics. Longman Singapore Publishers Ltd. Singapore. Johnston. R.G. 1983. Introduction to Sheep Farming. Granada Publishers. Sidney.

TPT1232 BREEDER POULTRY PRODUCTION

Module Name	**Breeder Poultry Production**
Semester(s) in which the module is taught	4th Semester
Person responsible for the module	Dr. Ir. Rudi Afnan, S.Pt., M.Sc.Agr
Lecturer	Dr. Ir. Rudi Afnan, S.Pt., M.Sc.Agr
Language	Indonesia
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours

Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to explain and analyze the management of breeder poultry production 2. Able to explain and analyze the management of the superior hatchery of seedlings 3. 3. Able to communicate well about the management of breeding and hatching poultry
Content	This course is discuss about production process of hatch egg and breed poultry included cock and hen reproduction organ, egg formation process and hatchery management, maintain management of breed poultry (environmental aspect, feed and drinking water aspect, disease prevention and effected factors to production performance
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Boiler Breeder Management. 2. User Management Guide. 3. Bell DD, Weaver WD. 2001. Commercial Chicken Meat and Egg Production. 5th Ed. Springer. USA 4. Funk EM, Irwin MR. 1955. Hatchery Operation and Management. John Wiley & Sons. New York 5. Nesheim MC, Austic RE, Card LE. 1979. Poultry Production. 12th Ed. Lea & Febiger. Philadelphia. 6. Tesis, Disertasi dan Jurnal/Publikasi Ilmiah terkait. 7. Tullett SG.1991. Avian Incubation. Poultry Science Symposium. No. 22. Butterworth-Heinemann. London.

TPT1241 ANIMAL GENETICS

Module Name	**Animal Genetics**
Semester(s) in which the module is taught	4thSemester
Person responsible for the module	Dr Ir Rini H. Mulyono, MSi
Lecturer	Dr Jakaria, SPt. MSi Prof Dr Ir Cece Sumantri, MSc Prof Dr Asep Gunawan, SPt. MScAgr

	Prof Dr Ir Muladno, MSA Dr Ir Sri Darwati, MSi
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to understand the development of livestock genetics related to the process of cell biology, molecular genetics, patterns of inheritance, crossovers and cell deviation as well as understanding gene frequency and probability theory as well as quantitative genetics. 2. Able to analyze the frequency of genes in the population and the distribution of quantitative data and to apply the distribution of quantitative data in graphs
Content	This course discuss about animal genetics development, cell biology, molecular genetics, qualitative heritability pattern, gen frequency and probability theory, quantitative genetics, qualitative data spreading, double gen expression and graphic compose for qualitative trait data spreading
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Brown, T.A.1999. Genome. BIOS Scientific Publisher.Singapore. 2. Griffit, A.J.E.,J.H. Miller, D.T.Suzuki, R.C. Lewontin and W.M Gelbert.1993. Basic Genetic.W.H. Freeman and Company.New York. 3. Martojo, H. 2016. Peningkatan Mutu Genetik Ternak . Departemen pendidikan dan Kebudayaan, Direktorat JenderalPendidikan Tinggi, Pusat Antar

	Univerity Bioteknologi. Institut Pertanian Bogor.,Bogor. 4. Noor, R.R.2000. Genetika Ternak. Edisi 2. Penebar Swadaya.Jakarta. 5. Stanfield, W.D. 1983. Schaums Outline of Theory and Problems: Genetics.,2nd Ed. McGraw-Hill Book Company. NewYork.

5th SEMESTER

TPT1302 LIVESTOCK ENVIROMENTAL MANAGEMENT

Module Name	**Enviromental Management of Animal Science**
Semester(s) in which the module is taught	5th Semester
Person responsible for the module	Dr. Ahmad Yani, S.TP., M.Si.
Lecturer	Dr. Windi Al Zahra, S.Pt, M.Si
Language	Indonesian
Relation to curriculum	Study Program in Dept Core
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to explain the role of the macro environment on livestock production such as weather and atmosphere, tropical and wet tropical climates, air temperature, relative humidity, solar radiation, air pressure, wind speed. 2. Able to explain thermonetral zone and livestock stress due to hot and cold weather 3. Able to apply biofilter techniques to environmental control of livestock 4. Able to analyze heat transfer mechanism in livestock environment 5. Able to choose micro environmental control techniques on farm housings
Content	This course is explain about the important role of micro and macro environment in animal production, micro environment measurement technique in animal science building, behaviour recording technique and animal heat production, heat transfer mechanism in animal environment, principal and mechanism heat transfer of open and closed system, biofilter technique in animal environment controlling
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice

	Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation

TPT1304 LIVESTOCK PRODUCTION EXTENSION

Module Name	**Livestock Production Extension**
Semester(s) in which the module is taught	5th Semester
Person responsible for the module	Dr. Ir. Lucia Cyrilla ENSD, MSi
Lecturer	Team Teaching from Faculty of Animal
Language	Indonesian
Relation to curriculum	Study Program in Dept Core
Type of teaching, contact hours	Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Mastering basic communication concepts and theories 2. Understand and design innovation communication methods 3. Designing innovation communication media 4. Designing an innovation communication strategy / approach
Content	This course discusses: basic concepts of communication in livestock extension, society and social systems, innovation communication methods, innovation communication media, extension media design and livestock innovation communication, as well as innovation communication strategies.
Study and examination requirement and forms of examination	***Cognitive:*** Midterm & Final exam, Quizzes, Assignments ***Psychomotor:*** Practice ***Affective:*** Assessed from the element /variables achievement, namely (a) Contributions (attendance,active, role, initiative, language), (b) Being on time, (c) Effort

Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Ardianto, E. 2011. Komunikasi Pembangunan dan Perubahan Sosial: Perspektif Dominan, Kaji Ulang dan Teoritis. Rajawali Press. 2. Arifin, B. 2005. Pembangunan Pertanian: Paradigma Kebijakan dan Strategi Revitalisasi. Grasindo, Jakarta. 3. Ison, RL dan Rusell, DB. 2000. Agricultural Extension and Rural Development: Breaking-out of Traditions. Cambridge University Press. 4. Leeuwis, C. 2009. Komunikasi untuk Inovasi Pedesaan: Berpikir Kembali tentang Penyuluhan Pertanian. Penerjemah: Sumarah. Kanisius, Yogyakarta.

TPT1321 DESIGN OF RUMINANT ANIMAL PRODUCTION

Module Name	**Design of Ruminant Animal Production**
Semester(s) in which the module is taught	5th Semester
Person responsible for the module	Prof. Rudy Priyanto
Lecturer	Dr. Henny Nuraini, Edit Lesa Aditia, Muhamad Baihaqi, Dr. Bramada W. Putra
Language	Indonesian
Relation to curriculum	Study Program in Dept Core Course
Type of teaching, contact hours	Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	• Registered in this course • Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	Student is able to understand the concept of designing beef cattle farms according to the production system (breeding/fattening) and the resulting output. Student is able to understand the technical coefficients of beef cattle production. Student is able to determine the location and land (site investigation) in designing a beef cattle farming business. Student is able to

	understand and apply the determination of the layout of barns and other supporting facilities. Student is able to understand the organizational management of beef cattle farms. Student is able to conceptualize and analyze business plans for beef cattle farming according to the resulting output
Content	This course covers the concept of designing beef cattle farms according to the production system and the resulting output, including technical coefficients of beef cattle production, site investigation for location and land determination, layout, design, and model of barns and supporting facilities, organizational management, business planning, and business analysis.
Study and examination requirement and forms of examination	***Cognitive:*** Midterm & Final exam, Quizzes, Assignments ***Psychomotor:*** Practice ***Affective:*** Assessed from the element /variables achievement, namely (a) Contributions (attendance,active, role, initiative, language), (b) Being on time, (c) Effort Assessment of students' achievement using proportion as follow: Project based learning (60%), quiz and practical (25%), and active participation (15%)
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Blanchet, K., H. Moeching and J.D. Hughes. 2000. Grazing Systems Planning Guide. University of Minnesota Extension Service. 2. Watts, PJ, RJ. Davis, OB. Keane, MM. Luttrell, RW. Tucker, R. Stafford and S. Janke (2016). Beef Cattle Feedlot: Design and Construction. Meat Livestock Australia. 3. Meat and Livestock Australia. 2010. Manual for South-East Asian cattle feedlots. 4. Meat and Livestock Australia. 2011. Tropical beef production manual. 5. Meat and Livestock Australia. 2016. Covered housing systems. 6. Food and Agriculture Organization of The United Nations. 1988. Farm Structures in Tropical Climates 7. Food and Agriculture Organization of The United Nations. 2018. E-Agriculture in Action: Drones for Agriculture. 8. The Danish Agricultural Advisory Center. 2020. Housing Design for Cattle-Danish Recomendation. 9. University of Minnesota Extension Service. 2002. Pastures for Profit : A guide to rotational grazing.

	10. United States Departement of Agriculture. 2002. Sheep and Goat Handling and Facilities Options.

TPT1323 TROPICAL INTERGRATED FARMING

Module Name	**Tropical Integrated Farming**
Semester(s) in which the module is taught	5th Semester
Person responsible for the module	Prof. Dr. Ir. Asnath M. Fuah, MS
Lecturer	Dr. Ir. Salundik, M.Si. Prof. Dr. Ir. Rudy Priyanto Dr. Ir. Bagus P. Purwanto, M.Agr
Language	Indonesian
Relation to curriculum	Study Program in Dept Core Course
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	● Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours ● Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours ● Exam : 120 minutes x 2 times = 240 minutes = 4 hours ● Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Explain the concept of integrated livestock farming using a systems approach 2. Describe the various classifications and characteristics of tropical livestock farming 3. Calculating the optimization of integrated integrated livestock farming systems based on economic value 4. Analyze the efficiency of SWOT-based integrated livestock farming 5. Design, verify and validate tropical livestock models
Content	This course is discuss about purpose and concepts of agribussines, agribussines definition and developmental with system approach; classification and characteristic system of animal agribussines; biology and economics efficiency from animal agribussines system, SWOT analysis, development design of animal agribussines system for efficiency and sustainability

Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation
Reading list	2. Amir, P and H. C. Knipscheer. 1989.Conducting on farm-animal research: procedure and economics analysis. Winrock International Institute for Agricultural Development and International Development Research Center, Canada. 3. Gottingen. 2000. Floristic Composition and Biomas of Fallow Vegetation in Abandoned Agricultural Fields of South-East Sulawesi. La Karimuna, Doctoral Dissertation. 4. Livestock Development in Indonesia. 1998. DirektoratJenderalPeternakan. DepartemenPertanian. 5. MenujuMasyarakatMandiri. 2003. Tim Crescent. GramediaPustakaUtama. 6. Opportunities, Use, and Transfer of Systems Research Methods in Agriculture to Developing Countries. 1991. F.W.T. Penning de Vries, CABO-DLO, Wangeningen, Netherlands. 7. Petheram, J., I. Subagio and R. S. Copland, 1993.Animal Science-Short Course on Animal Farming System. University of Mataram-Lombok Indonesia. 8. Penning. F., Teng P., MetselaarK.System Approaches for Agricultural Development. Vol. 2., Kluwer Academic Publishers. 9. Proceeding 2001. Sustainable Development in the Context of Globalization and Locality: Challenges and Options for Networking in Southeast Asia., RUKKABA Press. 10. Panduan Seminar danEksposeNasionalSistemIntegrasiTanaman-Ternak. 2004. BadabPenelitiandanPengembanganPertanian. 11. Planning Technologies appropriate to Farmers, Concept and procedures Winkiluraner CIMMYT 1980, Mexico. 12. PenguranganKemiskinan Pembangunan AgribisnisdanRevitalisasiPertanian. 2006. PusatStudi Pembangunan PertaniandanPedesaan. InstitutPertanian Bogor. 13. Ruthunberg, H. 1980. Farming System in the Tropic 3nd Ed., Clarendon Press Oxford. 14. Speeding, C.R.W., 1979. An Introduction to Agricultural System. 2nd Ed. Elsevier Applied Science, London and New York

	15. Saragih.,B. 1998. AgribisnisBerbasisPeternakan. PusatStudi Pembangunan. LembagaPenelitian. InstitutPertanian Bogor. 16. Shaner, W. W., P. F. Philip and W. R. Schurehl. 1982. Farming Systems Research and Development Guidelines for Development Countries, Westview Press Inc. Boulder, Colorado. 17. Sustainable animal production from small farm systems in South-East Asia. FAQ Animal Production and Health Paper. Vol. 106. 1993. Rome-Italy. 18. Sustainable Lombok. The Rich Nature and Rich People in the 21st Century 19. StatistikPeternakan. 2005. DirektoratJenderalPeternakan. DepartemenPertanian RI. 20. Systems Approaches for Agricultural Development. 1991. F.W.T. Penning de Vries, CABO-DLO, Wangeningen, Netherlands. 21. Undang-undang Peternakan dan Kesehatan Hewan Tahun 2009.

TPT1341 ANIMAL BREEDING

Module Name	**Animal Breeding**
Semester(s) in which the module is taught	5th Semester
Person responsible for the module	Dr. Jakaria, S.Pt., M.Si.
Lecturer	Prof. Dr. Asep Gunawan, S.Pt., M.Sc. Prof. Dr. Ir. Cece Sumantri, M.Agr.Sc. Prof. Dr. Ir. Ronny R. Noor, M.Rur.Sc. Prof. Dr. Ir. Muladno, MSA Dr. Ir. Rini H. Mulyono, M.Si. Dr. Ir. Sri Darwati, M.Si
Language	Indonesian
Relation to curriculum	Study Program in Dept Core Course
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS

Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	1. Able to explain the principles of breeding (diversity, genetic parameters, selection and crossover) 2. Able to explain and apply selection and crossing methods in livestock 3. Able to explain and analyze the role of genetic markers and reproductive technology in improving the genetic quality of livestock
Content	This course is offered knowledge for student to explain, understand about improvement genetics quality with selection and crossing approach. Utilitation the genetics markers and application in the animal breeding. Utilitation reproduction technology in the animal breeding. In addition offered knowledge for student to explain, understand about conservation of local genetics sources
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Bourdon, R.M. 1997. Understanding of Animal Breeding. Prentice Hall, Inc., Upper Saddle River, New Jersey. 2. Noor, 2000. Genetika Ternak. Penebar Swadaya Jakarta. 3. Wiener, G. 1994. Animal Breeding. CTA Macmillan Ediburg. 4. Millar, P., J.J. Lauvergne and C. Dolling. 2000. Mendelian inheritance in Cattle. Wageningen Press.

TPT1342 ANIMAL MOLECULAR TECHNOLOGY

Module Name	**Animal Molecular Technology**
Semester(s) in which the module is taught	5th Semester
Person responsible for the module	Prof. Dr. Asep Gunawan, SPt, MSc
Lecturer	Prof. Dr. Ir. Cece Sumantri, MSc Prof. Dr. Ir. Muladno, MSA Prof. Dr. Jakaria, SPt, MSi
Language	Indonesian
Relation to curriculum	Study Program in Dept Core Course
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester

Workload	• Lecture class: 50 minutes x 2 sch x 14 weeks = 1400 minutes = 24 hours • Discussion class: 60 minutes x 2 sch x 14 weeks = 1680 minutes = 28 hours • Exam: 120 minutes x 2 times = 240 minutes = 4 hours • Self-study: 50 minutes x 3 times x 14 weeks = 2100 minutes = 35 hours Total: 5400 minutes = 90 hours
Credit points	2 SCH x (1.6) = 3.2 ECTS
Requirement according to the examination regulation	3. Registered in this course 4. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	Student is able to master the fundamental principles and concepts of molecular technology as one of the techniques in the study of modern genetics. Student is able to identifying molecular technologies and simultaneously conducting research investigations in the field of animal husbandry. Student is able to integrate the capabilities of molecular techniques and bioinformatics for molecular genetic analysis. Student is able to demonstrate solid and effective collaboration in designing, reporting, and presenting projects related to molecular technology in the field of animal husbandry.
Content	This course is offered knowledge for student to extract and get insights of the principles of DNA and RNA as genetic materials, including the structure and types of DNA and RNA, understanding of gene expression, identifying genomic structures, discovering genes, structures, mutations, and integrating them through databases, demonstrating and simulating in silico analysis for molecular analysis, molecular technique, creating a project design to improve the genetic quality of livestock through a molecular technology approach: Study of genomic/mutational DNA or gene expression/transcriptomics, and performing project presentation: genetic improvement of livestock through molecular technology
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort Assessment of students' achievement using proportion as

	follow: midterm examination (25%), final examination (25), practical and project based learning (50%)
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Alberts, B, D. Bray, K. Hopkin, A. Johnson, J. Lewis, M. Raff, K. Roberts, P. Walter. 2004. Essential Cell Biology 2nd Ed. Garland Science. New York. US 2. Brown, T.A. 2002. Genome 3. New York. Wiley-Liss. 3. Dennis Jr, Glynn. 2003. Database for annotation, visualization, and integrated discovery. Genome biol 4:3 4. Gibson, G and S. Muse. 2001. A Primer of Genome Science. Sinauer Associates, Inc Publisher. Massachuesetss. US 5. Griffith, A.J.F.,J.H. Miller,D.T. Suzuki, R.C. Lewontin, W.M. Gelbart. 1993. Genetic Analysis 5th Ed. W.H. Freeman Company. US 6. IPA. 2012. Inguinity Pathway Analysis. 7. Kinghorn, B and J.V.D Werf. 2000. Identifying and Incorporating Genetic Markers and Major Genesin Animal Breeding Programs. 8. Armidale. New England. Australia 9. Posada, D. 2009. Methods in Molecular Biology : Bioinformatics for DNA Sequence Analysis. Humana Press. New York. US 10. Reece,R.J. 2004. Analysis of Genes and Genomes. John Wiley&Sons Ltd. WestSussex. England 11. Riis,P.M. 1982. World Animal Science: Dynamic Biochemistry of AnimalProduction. Elsevier Science, Publishing Company. New York. US.

TPT1351 LIVESTOCK WASTE MANAGEMENT

Module Name	**Livestock Waste Management**
Semester(s) in which the module is taught	6th Semester
Person responsible for the module	Dr. Ir. Salundik, MSi
Lecturer	Dr. Windi Al Zahra, S.Pt, M.Si
Language	Indonesian
Relation to curriculum	Study Program in Dept Core Course
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours

	• Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	
Module objectives/intended learning outcome	1. Understand the important role of the environment for humans and livestock 2. Able to understand the impact of livestock waste on the water and air environment 3. Able to explain livestock waste management techniques and their by-products
Content	This course discusses the concept of the environment and pollution as well as the impact of livestock on the environment. Also discussed with the waste management system, the nature and characteristics of livestock waste (physical, chemical and biological) i waste regarding the construction of livestock sheds and handling and processing techniques for livestock waste
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation

TPT1305 HALAL MANAGEMENT OF LIVESTOCK

Module Name	**Halal Management Of Livestock**
Semester(s) in which the module is taught	6th Semester
Person responsible for the module	Dr Ir Henny Nuraini, MSi
Lecturer	Dr Epi Taufik Dr Yuni C.E.
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester

Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	
Module objectives/intended learning outcome	Student is able to explain and understandthe basic principles of Islamic law regarding halal food, regulations, and halal policies, as well as the process of determining halal product fatwas. Student is able to understand the halal production process, including knowledge of halal ingredients, critical points in the halal production process, and techniques for analyzing contaminants in livestock production units, slaughterhouses, and livestock processing industries. Student is able to apply the principles of livestock production process safety, its control, and risk assessment in the safety of livestock production processes and livestock product safety. Student is able to design guidelines for livestock production units that meet halal and food safety requirements.
Content	This course discusses the legal aspect of halal food according to religious principles, halal regulations, procedures for determining halal fatwas, principles of halal management systems in livestock production, abattoir, processing industries, requirements of halal materials, critical points of haram, analytical techniques, requirements and application for halal certification, halal supervisor competency, food safety principles and practices, and risk assessment.
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam (20%), Final exam (15%), Project based learning (40%), and assignment (15%) ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation

6th SEMESTER

TP1301 ABBATOIR

Module Name	Abbatoir
Semester(s) in which the module is taught	6th Semester
Person responsible for the module	Dr Ir Henny Nuraini, MSi
Lecturer	Prof Dr Ir Rudy Priyanto Prof Dr Ir Niken Ulupi, MS Dr Ir Komariah, MSi M Baihaqi, SPt, MSc Edit Lesa A, SPt, MSc
Language	Indonesian
Relation to curriculum	Study Program in Dept Core Course
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	● Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours ● Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours ● Exam : 120 minutes x 2 times = 240 minutes = 4 hours ● Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	3. Registered in this course 4. Minimum 80% attendance in this course
Recommended prerequisites	
Module objectives/intended learning outcome	1. Able to understand laws and policies on slaughterhouses, the principles of their establishment and management. 2. Able to apply aspects of animal health and welfare in handling livestock before slaughter 3. Understand and evaluate the process of slaughtering livestock (cattle, sheep, pigs and poultry) as well as carcass and meat handling to produce quality products. 4. Able to apply halal slaughtering procedures to ruminants and poultry
Content	This course discusses the Law and policies on Slaughterhouses, the principles of establishment and management, sanitation & hygiene, the process of slaughtering livestock and its relationship with the quality of carcass and meat produced, antemortem and postmortem examinations, characteristics and methods of carcass evaluation and classification and grading of carcasses of cattle, sheep and pigs and poultry, and handling of slaughterhouse waste

Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Aberle, E.D., J.C. Forest, D.E. Gerrard, and E.W. Mils. 20001. Principles of Meat Sciences. 4th Ed. Hunt Publishing Company, Lowa. 2. Badan Pusat Statistik Indonesia. 2002. Statistik Industri Besar dan Sedang Bagian III. Badan Pusat Statistik Indonesia, Jakarta. 3. Badan Pusat Statistik Indonesia. 2003. Statistik Indonesia. Badan Pusat Statistik Indonesia, Jakarta. 4. Badan Standarisasi Nasional. SNI 01-6160-1999 tentang Rumah Pemotongan Unggas. Badan Standarisasi Nasional, Jakarta. 5. Badan Standarisasi Nasional. SNI 01-3924-1995 tentang Mutu Karkas dan Daging Ayam. Badan Standarisasi Nasional, Jakarta. 6. http://www.asiamaya.com (produk undang-undang) 7. http://www.wikipedia.com (online ensiklopedia) 8. Mountney, G.J. 1966. Poultry Product Technology. The AVI Publishing Company, Inc., Westport 9. Priyantono, M.A. 2003. Mendirikan Usaha Pemotongan Ayam. Penebar Swadaya, Jakarta 10. Simoons, F.J. 1961. Eat Not This Flesh. The University of Wisconsin Press, Madison.

TPT1303 RESEARCH METHODOLOGY FOR ANIMAL PRODUCTION

Module Name	**Research Methodology for Animal Production**
Semester(s) in which the module is taught	6th Semester
Person responsible for the module	Prof Dr Ir Niken Ulupi, MS
Lecturer	Dr Ir Sri Darwati, MSi Dr. Windi Al Zahra, S.Pt, M.Si
Language	Indonesian
Relation to curriculum	Study Program in Dept Core Course
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	
Module objectives/intended learning outcome	1. Able to understand scientific frame of mind 2. Able to explain the experimental design concept 3. Able to use analysis of variance, variety and testing with non-parametric methods in experimental design 4. Able to interpret the results of data analysis in experimental design 5. Able to compile a research plan
Content	This course is discuss scientific mind mapping, statistical implementation and scientific method on the experimental design, one way experimental, two way experimental, descriptive statistic, non parametric statistic experimental, and correlation and regression analysis.
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam, Final exam, Quizzes, Assignments ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation
Reading list	1. Aunuddin. 2005. *Statistika: Rancangan dan Analisis Data*. Bogor, IPB-Press.

	2. Daniel.W.W. 1990. *Applied Nonparametric Statistics.* 2nd Ed. Boston. Thomson Information/Publishing Group. 3. Gaspersz. V. 1992. *Teknis Analisis dalam Penelitian Percobaan*. Jilid 1. Bandung, Tarsito. 4. Mattjik,A.A, dan M. Sumertajaya. 2006. *Perancangan Percobaan dengan Aplikasi SAS dan MINITAB* Jilid 1. Bogor. IPB Press. 5. Minitab Inc. 2013. Minitab Statistical Software, Release 17 for Windows, State College, Pennysylvania. 6. Sprent P. 1991. Metode Statistik Nonparametrik Terapan. Osman E, Rudiansyah, penerjemah. Jakarta. UI-Press. 7. Steel R.G.D., J.H. Torrie and D.A. Dickey. 1997. *Principles and Procedures of Statistics a Biomedical Approach*, 3th Ed. Singapore. McGraw-Hill, Inc.

TPT1351 SAFETY OF LIVESTOCK PRODUCT

Module Name	**Safety of Livestock Product**
Semester(s) in which the module is taught	6th Semester
Person responsible for the module	Prof. Irma Isnafia Arief
Lecturer	Dr. Zakiah Wulandari Dr. Tuti Suryati Dr. Epi Taufik
Language	Indonesian
Relation to curriculum	Academic Core Courses
Type of teaching, contact hours	Lecture (Face to face lecture): 2hours x 14 weeks per semester Student Centered Learning: 2 hours x 14 weeks per semester
Workload	● Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours ● Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours ● Exam : 120 minutes x 2 times = 240 minutes = 4 hours ● Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	5. Registered in this course 6. Minimum 80% attendance in this course
Recommended prerequisites	
Module objectives/intended learning outcome	Student is able to identifying and analyzing principles of livestock product safety, including regulations, types of contamination, synthetic and modified livestock products,

	contamination mechanisms, prevention methods, and reviewing various cases of livestock product safety as a source of food and non-animal origin.
Content	This course covers the safety of livestock products, microbial contamination, toxins, chemical and physical contaminants, functional foods, synthetic and modified livestock products, product engineering through advanced technology, and cases of livestock product safety as a source of food and non-food animal products
Study and examination requirement and forms of examination	***Cognitive***: Midterm exam (20%), Final exam (20%), Project based learning (50%), and active participation (10%) ***Psychomotor***: Practice ***Affective***: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation

FPT1402 LOGISTICS

Module Name	**Logistics**
Semester(s) in which the module is taught	6th Semester
Person responsible for the module	Dr. Rudi Afnan, SPt. MScAgr
Lecturer	Team Teaching from Faculty of Animal
Language	Indonesian
Relation to curriculum	Fundamental Literacies
Type of teaching, contact hours	Lecture (Face to face lecture): 100 minutes x 14 weeks per Semester
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	-
Module objectives/intended	Able to understand:

learning outcome	1. Supply chain system for production materials and livestock output 2. Risk management in livestock logistics 3. Regulation of livestock logistics
Content	Discusses the supply chain system for production materials and livestock output, the role of trading, information systems, marketing problems and consumer characteristics. It also discusses risk management in the process of livestock production and logistics, which includes technical standards, efficiency and infrastructure, logistic networks, as well as livestock logistics regulations.
Study and examination requirement and forms of examination	***Cognitive:*** Midterm & Final exam, Quizzes, Assignments ***Psychomotor:*** Practice ***Affective:*** Assessed from the element /variables achievement, namely (a) Contributions (attendance,active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Classical teaching tools with white board and power point presentation

7th SEMESTER

IPB1400 COMMUNITY SERVICE PROGRAM (KKNT)

Module Name	Community Service Program
Semester(s) in which the module is taught	7th Semester
Person responsible for the module	Dr. Jakaria, SPt. MSi
Lecturer	Team Teaching from Faculty of Animal Science
Language	Indonesian
Relation to curriculum	Final Year Project
Type of teaching, contact hours	2 months including debriefing and Community service
Workload	• Lecture class : 50 minutes • Proposal • Mapping location • Workshop x 2 • Program implementation ; 5 hours x • Field evaluation • Report • Exam 4 x 45 hours = 180 hours
Credit points	4 SCH x (1.6) = 6.4 ECTS
Requirement according to the examination regulation	1. Registered as a student of KKN-T IPB in Dit AP IPB 2. Following lectures and practicing briefing (100%) KKN-T. 3. Take the debriefing exam. 4. Students who lack attendance in attending lectures and briefing practice (item 2), is not allowed to follow debriefing exams, and debriefing courses were given zero marks. 5. Carry out activities in the field / work area. College student required to live on site (mondok) during the KKNP implementation time, including Saturdays and Sundays; 6. Draft KKN-T reports per work area and submit to the IPB KKN-T Implementing Committee at the Faculty two weeks after completion of KKN-T. 7. Take the exam conducted by DPL two weeks after draft report submitted. 8. Submit the final KKN-T report that has been signed by DPL and approved by the Head of LPPM IPB no later than two week after the KKN-T exam to the KKN-T Secretariat at LPPM 1 copy and 1 CD softcopy of the report and to The Secretariat of the Faculty KKN-T Committee is 6 copies.
Recommended prerequisites	1. IPK ≥ 2.00

	2. 105 SCH
Module objectives/intended learning outcome	1. Develop students knowledge, attitudes, and skills in identifying, planning, implementing and evaluating community empowerment programs in the agricultural sector in a broad sense, including in the field animal husbandry and in integrated environmental (multi and inter-disciplinary between professions in IPB), 2. Increase awareness and commitment, and prepare students to skilled in communicating and collaborating among profession in overcoming problems in society, 3. Preparing students to be able to develop networks cooperation in problem solving efforts to fulfill needs in the dynamics of actual life in society.
Content	This course provide learning experience for student to apply their knowledge and skills for community service program.
Study and examination requirement and forms of examination	1. Debriefing (attendace, active, effort, exam) 2. Field (supervisors and village head) 3. Reports and Exams 4. Assessed from the element/variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort.
Media employed	Students (5-7) from various fields of expertise are placed in one village to implement the KKN-T program in synergy with the development program that is being and will be implemented by the local government
Reading list	IPB University Guide book of Community Service Program

TPT1498 SEMINAR

Module Name	**Seminar**
Semester(s) in which the module is taught	7th and 8th Semester
Person responsible for the module	Dr Yuni Cahya Endrawati, SPt. MSi
Lecturer	Team Teaching fromAPT-SP
Language	Indonesian
Relation to curriculum	Final Year Project
Type of teaching, contact hours	Final project presentation and discussion
Workload	• Lecture class : 50 minutes • Final project presentation : 50 minutes • Attendance 25 times x 50 minutes = 1250 minutes = 21 hours • Self-study = 60 minutes x 1 times x 14 weeks = 750 minutes = 66 hours Total : 2700 minutes = 45 hours

Credit points	1 SCH x (1.6) = 1.6 ECTS
Requirement according to the examination regulation	Registered in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	Students are able to arrange and submit the results of their final assignment studies in scientific forums
Content	-
Study and examination requirement and forms of examination	Assessment includes: the ability to deliver seminar papers, the ability to answer and the accuracy of answers, language and attitude, paper format, timeliness
Media employed	Power point presentation
Reading list	Panduan Penyelesaian Tugas Akhir (Guide book for Final Project) IPB University

TPT1401 DEVELOPING LIVESTOCK BUSSINESS MODEL

Module Name	**Developing Livestock Bussiness Model**
Semester(s) in which the module is taught	7th Semester
Person responsible for the module	Dr. Ahmad Yani
Lecturer	Dr. Lucia Cyrilla ENSD Prof. Asnath M Fuah and Team Teaching fromAPT-SP
Language	Indonesian
Relation to curriculum	Final Year Project
Type of teaching, contact hours	Final project presentation and discussion
Workload	• Lecture class : 50 minutes x 2 sch x 14 weeks = 1400 minutes = 23 hours • Practical class : 60 minutes x 3 sch x 14 weeks = 2520 minutes = 42 hours • Exam : 120 minutes x 2 times = 240 minutes = 4 hours • Self-study : 60 minutes x 5 times x 14 weeks = 3940 minutes = 66 hours Total : 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	Registered in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	Student is able to explain livestock business, creating an inventory of livestock business models, drafting a Business Model Canvas (BMC) for livestock ventures. Student is able to prepare a livestock business proposal, and able to present a livestock business proposal

Content	Through this capstone project, students will engage in independent practice with guidance and facilitation to design or establish livestock ventures through start-up businesses, independent livestock enterprises, cooperatives, and partnerships in the livestock sector for various purposes and forms of businesses (cooperatives, breeding, fattening, logistics, marketing). This will involve utilizing the Industry 4.0 system, starting from product determination, analyzing livestock production business, drafting business model canvases (including livestock business needs, land, livestock, human resources, determining livestock business locations), obtaining livestock business permits, logistics and trade routes, as well as financial institutions, institutions, legal aspects, and legality, and validating the feasibility of livestock production using the Industry 4.0 system in a livestock business proposal.
Study and examination requirement and forms of examination	Project based (90%), and active participation (10%)
Media employed	Power point presentation

TPT1402 MINI PROJECT OF ANIMAL PRODUCTION

Module Name	**Developing Livestock Bussiness Model**
Semester(s) in which the module is taught	7th Semester
Person responsible for the module	Edit Lesa Aditia, S.Pt, M.Sc
Lecturer	• Dr. Ahmad Yani • Dr. Lucia Cyrilla ENSD • Dr. Sri Darwati • Muhammad Arifin, S.Pt, M.Si • M. Baihaqi, S.Pt, M.Sc and Team Teaching fromAPT-SP
Language	Indonesian
Relation to curriculum	Final Year Project
Type of teaching, contact hours	Final project presentation and discussion
Workload	• Lecture class : 50 minutes • Proposal • Mapping location • Workshop x 2 • Program implementation ; 5 hours x • Field evaluation • Report • Exam

	4 x 45 hours = 180 hours
Credit points	4 SCH x (1.6) = 6.4 ECTS
Requirement according to the examination regulation	Registered in this course
Recommended prerequisites	-
Module objectives/intended learning outcome	Student is able to have experience in direct involvement in the business and industrial sectors or creating prototype entrepreneurial innovations in livestock. Student is able to identify and mitigate inefficiencies in livestock businesses. Student is able to design solutions for the challenges faced in livestock businesses. Student is able to analyze the interrelationship between technical, economic, and environmental aspects in livestock business. Student is able to conceptualize and analyze economic-scale business innovations in livestock production
Content	The Mini Livestock Production Project course aims to address the transformation of the livestock sector from Industry and Society 2.0 to the synergy of Industry 4.0 and Society 5.0. This capstone course involves implementing entrepreneurship in both the industrial and livestock business worlds holistically, through problem-solving strategies and innovations in economically and efficiently run livestock businesses. It utilizes Active Learning in Higher Education (ALIHE), the 4C framework (Creative, Critical Thinking, Communicative, and Collaborative skills), and Higher Order Thinking Skills (HOTS) collaboratively within 3 to 5-person teams. This can involve direct engagement in business and industry or creating prototype entrepreneurial innovations in livestock. Active Learning innovations can include Professional Management Learning in business and industry, Sosiopreneurship Learning in small-scale and government livestock farming units, as well as Prototyping Innovation Learning independently.
Study and examination requirement and forms of examination	Project based (60%), and active participation (40%)
Media employed	Power point presentation

8th SEMESTER

TPT1497INTERNSHIP (PL)

Module Name	Internship (PL)
Semester(s) in which the module is taught	7th and 8th Semester
Person responsible for the module	Edit Lessa Aditia, S.Pt, M.Sc
Lecturer	All lecturers in the study program who meet the requirements
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in APT-SP
Type of teaching, contact hours	1 month at the field practice
Workload	Interview and designing internship : 810 x 1 time = 810 =13.5 hours Field work: 2430 minutes x 1 time = 2430minutes = 40.5 hours Working group : 2430 minutes x 1 time = 2430minutes = 40.5 hours Final task and presentation : 810 x 1 time = 810 =13.5 hours Total: 8100 minutes = 135 hours
Credit points	3 SCH x (1.6) = 4.8 ECTS
Requirement according to the examination regulation	1. Implementation of field practice has been completed 2. The draft report has been approved by the supervisor
Recommended prerequisites	1. Registered in this course 2. GPA ≥ 2.00
Module objectives/intended learning outcome	Give students the experience of working hard in the livestock industry
Content	-
Study and examination requirement and forms of examination	1. Debriefing (attendace, active, effort, exam) 2. Field (supervisors and village head) 3. Reports and Exams 4. Assessed from the element / variables achievement, namely (a) Contributions (attendance, active, role, initiative, language), (b) Being on time, (c) Effort
Media employed	Livestock industry or smallholder livestock with the requirements set by the APS-SP
Reading list	IPB University Guide book of PL

TPT1499 FINAL PROJECT/UNDERGRADUATE THESIS

Module Name	**Final Project/Undergraduate Thesis**
Semester(s) in which the module is taught	7th and 8th Semester
Person responsible for the module	Head of APT-SP
Lecturer	All lecturers in the study program who meet the requirements
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in APT-SP
Type of teaching, contact hours	Research or Internship or literature study
Workload	4 months
Credit points	6 SCH x (1.6) = 9.6 ECTS
Requirement according to the examination regulation	Have passed all other courses
Recommended prerequisites	1. Registered in this course 2. GPA ≥ 2.00 3. Pass PTP302 with grade minimum D
Module objectives/intended learning outcome	Students able to compile a scientific description of the results of the study in the form of a bachelor thesis or final project report
Content	-
Study and examination requirement and forms of examination	Assessment includes: the ability to deliver thesis, the ability to answer and the accuracy of answers, language and attitude, paper format, timeliness
Media employed	Power point presentation
Reading list	Panduan Penyelesaian Tugas Akhir (Guide book for Final Project IPB University)