Module designation	Cytogenetics				
Semester(s) in which the	Even semester				
module is taught					
Person responsible for the	Prof. Dr. Ir. Sumadi, MS., IPU.				
module	Prof. Ir. Tety Hartatik, S.Pt., Ph.D., IPM.				
	Ir. Dyah Maharani, S.Pt., MP., Ph.D., IPM.				
Language	Bahasa and English				
Relation to curriculum	Specialization's Elective				
Teaching methods	Classical lecture and discussion				
Workload (incl. contact hours,	Total workload: 79 hours				
self-study hours)	Contact hours:				
	- Lecture: 23 hours				
	<ul> <li>Academic activity: 28 hours</li> </ul>				
	Private study: 28 hours				
Credit points	2/0				
Required and recommended					
prerequisites for joining the	None				
module					
Module objectives/intended	Course Outcomes (CO):				
learning outcomes	1. Students are able to comprehend the inheritance mechanism.				
	2. Students are able to comprehend the shapes, structures,				
	numbers, and behaviours of chromosome.				
	3. Students are able to comprehend the abnormality on animal				
	phenotype caused by chromosome change.				
	Expected Learning Outcomes:				
	- Mastery in Sciences:				
	1. Able to master the current animal science and its				
	application theory. (CO1, CO2, CO3)				
Content	Cytogenetic is a course discusses various aspects related to cell,				
	i.e. shape and structure of chromosome, chromosome behavior,				
	changes on chromosome shape and number, chromosome				
	evolution and its phenotypic expression. Contents discussed in this				
	course include theory of chromosome and its relationship with				
	inheritance, offspring mechanism viewed from cell division,				
	chromosome types, changes on chromosome structure, changes				
	on number of chromosomes and cytoplasmic inheritance, also				
	possibility of phenotypic abnormalities caused by chromosome				
	mutation. Students who already take the cytogenetic course are				
	expected comprehend and able to explain the inheritance				
	mechanism that happen in the cells and know the abnormality types				
	on animal phenotype caused by chromosome abnormalities.				

Assessment		Course Outcomes		Dereentere (9/)							
Components		(CO)		Percentage (%)							
1. Midterm e	exam	am									
(written test,	tten test, take		2 CO2	35							
home exam, paper		4 002		30							
assignment)											
2. Final exam (written											
test, take home		CO3		35							
exam, paper		003		00							
assignment)											
3. Short quizzes		CO1, CO2 & CO3		10							
4. Take-home written		CO2 & CO3		20							
assignment											
Grade and Score											
Grade		Score	Grade	;	Score						
A		≥80	C+		45-49,9						
A-	7	75-79,9			40-44,9						
A/B	70-74,9		C-		35-39,9						
B+	6	65-69,9	C/D		30-34,9						
В	6	60-64,9	D+		25-29,9						
B-	55-59,9		D		20-24,9						
			E		0-19,9						
The final grade in the module is composed of 35% performance on											
Midterm exam, 35% final exam, 10% quiz, and 20 % take-home											
written assignment. Students must have a final grade of 70% o											
higher to pass											
<ul> <li>D.S. Falconer and Trudy F.C. Mackay, 1996, Introduction Quantitative Genetics Fourth Edition, 1996</li> <li>Griffiths, Miller, Susuki, Lewontin and Gelbart. An Introduction Computer Application</li> </ul>											
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- Riley, H. P. 1957. Genetic and Cytogenetics. John Wiley &											
- Snustad and Simmons, 2006. Principles of Genetics Fourth											
<ul> <li>Suryo, H. 1995. Sitogenetika. Gadjah Mada University Press.</li> </ul>											
- Warwick E.J., J. Maria Astuti dan W. Hardjosubroto. 1983.											
Pemuliaan Ternak. Fakultas Peternakan UGM. Gadjah Mada											
University Press. Yogyakarta.											
	Component 1. Midterm (written test, home exam, p assignment) 2. Final exam (w test, take f exam, p assignment) 3. Short quizzes 4. Take-home w assignment 3. Short quizzes 4. Take-home w assignment 3. Short quizzes 4. Take-home w assignment B B- B/C The final grade i Midterm exam, written assignm higher to pass - D.S. Falco Quantitativ - Griffiths, M to Genetic - Hardjosubr 1998. Per Universitas - Philip Men Genomes a - Riley, H. F Sons, Inc. - Snustad ar Edition, 20 - Suryo, H. 1 Yogyakarta - Tamarin, R - Warwick E Pemuliaan	Components1. Midtermexam(writtentest, takehome exam, paperassignment)2. Final exam (writtentest, takehomeexam, paperassignment)3. Short quizzes4. Take-home writtenassignmentGradeAA-A/BAB+60B60B-55B/C55The final grade in theMidterm exam, 35%written assignment. Shigher to pass-D.S. Falconer arQuantitative Ger-Griffiths, Miller, Sto Genetic Analy-Hardjosubroto,W1998. PengantaUniversitas Gadj-Philip Meneely, 3Genomes and N-Snustad and SimEdition, 2006-Suryo, H. 1995.YogyakartaTamarin, R. 1994Warwick E.J., J.Pemuliaan Terration	Components(C1. Midtermexam (writtentest, take home exam, paper assignment)CO1 &2. Final exam (written test, take home exam, paper assignment)CO1, CO3. Short quizzesCO1, CO4. Take-home written assignmentCO2 &3. Short quizzesCO1, CO4. Take-home written assignmentCO2 &GradeScoreA≥80A-75-79,9A/B70-74,9B+65-69,9B60-64,9B-55-59,9B/C50-54,9The final grade in the module is cMidterm exam, 35% final exam, written assignment. Students mu higher to pass-D.S. Falconer and Trudy F. Quantitative Genetics Fourth-Griffiths, Miller, Susuki, Lewa to Genetic AnalysisHardjosubroto,W. (Prof. Drh 1998. Pengantar Genetika Universitas Gadjah Mada. Y-Philip Meneely, 2009. Adva Genomes and Networks in E-Riley, H. P. 1957. Genetic Sons, Inc. New York. Chapr-Snustad and Simmons, 200 Edition, 2006-Suryo, H. 1995. Sitogenetika YogyakartaTamarin, R. 1999. Principles-Warwick E.J., J. Maria Ast Pemuliaan Ternak. Fakultas	Components       (CO)         1. Midterm       exam         (written test, take home exam, paper assignment)       CO1 & CO2         2. Final exam (written test, take home exam, paper assignment)       CO3         3. Short quizzes       CO1, CO2 & CO3         4. Take-home written assignment       CO2 & CO3         4. Take-home written assignment       CO2 & CO3         5. Short quizzes       CO1, CO2 & CO3         4. Take-home written assignment       CO2 & CO3         6 Grade       Score       Grade         A       ≥80       C+         A-       75-79,9       C         A/B       70-74,9       C-         B+       65-69,9       C/D         B       60-64,9       D+         B-       55-59,9       D         B/C       50-54,9       E         The final grade in the module is composed of       Midterm exam, 35% final exam, 10% quiz,         written assignment. Students must have a thigher to pass       -         -       D.S. Falconer and Trudy F.C. Mackay, Quantitative Genetics Fourth Edition, 19         -       Griffiths, Miller, Susuki, Lewontin and Get to Genetic Analysis.         -       Hardjosubroto,W. (Prof. Drh. Wartomo 1998. Pengantar	Components(CO)Period1. Midtermexam (writtentake home exam, paper assignment)CO1 & CO22. Final exam (written test, take home exam, paper assignment)CO3CO33. Short quizzesCO1, CO2 & CO3CO34. Take-home written assignmentCO2 & CO3CO34. Take-home written assignmentCO2 & CO3CO4ACO2 & CO3CO4CO4AASOC+A75-79,9CCA/B70-74,9C-C-B+65-69,9C/DDB60-64,9D+B-55-59,9DB/C50-54,9EThe final grade in the module is composed of 35%Midterm exam, 35% final exam, 10% quiz, and 2written assignment. Students must have a final gr higher to pass-D.S. Falconer and Trudy F.C. Mackay, 1996 Quantitative Genetics Fourth Edition, 1996-Griffiths, Miller, Susuki, Lewontin and Gelbart. to Genetic AnalysisHardjosubroto,W. (Prof. Drh. Wartomo Hardji 1998. Pengantar Genetika Hewan. Fakult Universitas Gadjah Mada. Yogyakarta. Indom- Philip Meneely, 2009. Advanced Genetics Ar Genomes and Networks in Eukaryotes-Riley, H. P. 1957. Genetic and Cytogenetics Sons, Inc. New York. Chapman & Hall, Limitte Snustad and Simmons, 2006. Principles of C Edition, 2006-Suryo, H. 1995. Sitogenetika. Gadjah Mada L YogyakartaTamarin, R. 1999. Principles of GeneticsWarwick E.J., J. M						