Module/Course Description
Forest Ecology (SVK 212)

A. Module Identity		
1.	Name	Forest Ecology
2.	Code	SVK 212
3.	Credit	3 (2-3)
4.	Semester	4
5.	Pre-requisite	-
6.	Coordinator	Prof Dr Ir Cecep Kusmana, MS
7.	Lecturers	1. Prof Dr Ir Cecep Kusmana, MS 2. Dr Ir Iwan Hilwan, MS 3. Dr Ir Yadi Setiadi, M.Sc 4. Dr Ir Istomo, MS 5. Dr Ir Omo Rusdiana, M.Sc 6. Dr Ir Basuki Wasis, MS 7. Dr Ir Agus Hikmat, M.Sc 8. Dr Ir Cahyo Wibowo, M.Sc 9. Dr Ir Rahmad Hermawan, M.Sc. F. Trop
8.	Language	Indonesian
9.	Program(s) in which the course is offered	Internal department: Forest Management Program Other departments: Forest Technology Study Program, Forest Resource Conservation and Ecotourism Study Program, Silviculture Study Program
10.	Type of teaching	a. Traditional classroom: 100 % b. Blended system: Traditional classroom….%, Online….% c. e-Learning system: ……..% d. Others: ……..%

B. Workload of course components (total contact hours and credits per semester)

Credit		Contact Hours**				Self-Study	Other	Total
SKS *)	ECTS	Lecture	Class Exercise	Laboratory	Field Practice			
3		**28**			**42**	**56**		**126**

**) Semester credit unit according to the Indonesian higher educational system*
1 credit unit lecture = 2 hours/ week for lecture and 2 hours/ week for self-study within 14 weeks/ semester
1 credit unit class exercise or laboratory or field practice = 3 hours/week within 12-14 weeks/semester
***) 1 hour for lecture= 50 minutes; 1 hour for class exercise or laboratory or field practice = 60 minutes*

C. Module Objective (Learning Outcomes)
By the end of this subject, students are expected to able to explain the meaning and importance of forest ecology in tropical forest management

D. Detailed Course Learning Outcomes (LO) in Relation to Learning Domains, Teaching Strategies, and Assignment Methods			
No.	**LO in Learning Domains**	**Teaching Strategies**	**Assessment Methods**
a.	**Knowledge**		
1.	Students are able to explain the definition of ecology, forest, forest ecology and the study	Lecturer's explanation,	Authentic assessment

	field of forest ecology, and important aspects for forestry	discussion	
2.	Students are able to explain the definition of ecosystem, ecosystem components, ecosystem structures, and factors of ecosystem difference, type, and size	Lecturer's explanation, discussion	Authentic assessment
3.	Students are able to explain the definition of basic stages in ecosystem operations, energy in ecosystems, food chains, tropical structures and ecological pyramids, productivity and biogeochemical cycles	Lecturer's explanation, discussion	Authentic assessment
4.	Students are able to explain the plant communities, forest stands, types of plant species interactions, plant communities in growth and physics (life form)	Lecturer's explanation, discussion	Authentic assessment
5.	Students are able to explain the definition of forest environment, environmental factors, abiotic factors, biotic factors, transpiration, plant adaptation	Lecturer's explanation, discussion	Authentic assessment
6.	Students are able to explain the meaning of succession, factors of succession, succession type, succession stage, succession type based on environment fertility in succession theory	Lecturer's explanation, discussion	Authentic assessment
7.	Students are able to explain the definition of vegetation, tropical forest vegetation classification system, structure classification and life form, classification based on dominant type, classification based on floristic components, and forest classification in Indonesia.	Lecturer's explanation, discussion	Authentic assessment
8.	Student are able to explain forest formations, definition of vegetation zones in Indonesia, types of natural forest ecosystems, types of artificial forest ecosystems, distribution of tropical forests, flora regions and world forest formations	Lecturer's explanation, discussion	Authentic assessment
9.	Students are able to explain about vegetation analysis, vegetation analysis methods, and data analysis	Lecturer's explanation, discussion	Authentic assessment
10.	Students are able to explain the definition of tree species selection, deforestation rate, forest conditions in Indonesia, determination of tree species and the purpose of planting	Lecturer's explanation, discussion	Authentic assessment
11.	Students are able to explain the ecological approach for critical land rehabilitation, the meaning of tropical rain forests, rehabilitation activities, conditions of degraded forests, revegetation purposes and revegetation benefits	Lecturer's explanation, discussion	Authentic assessment
12.	Students are able to explain revegetation models for rehabilitation of degraded land, land preparation, heavily degraded land sustainability criteria for degraded land	Lecturer's explanation, discussion	Authentic assessment
13.	Students are able to explain the impacts of forest disturbance, sources of forest	Lecturer's explanation,	Authentic assessment

	destruction, ecosystem components affected, degradation in each forest type	discussion	
14.	Students are able to explain the soil aspects in forest ecology, pedogenesis, soil horizon, soil structure, soil texture and soil classification	Lecturer's explanation, discussion	Authentic assessment
b.	**Skills**		
1.	The students are able to explore forest and meadow ecosystem	Lecturer's explanation, practicum, discussion	Authentic assessment
2.	The students are able to demonstrate biomass estimation	Lecturer's explanation, practicum, discussion	Authentic assessment
3.	The students are able to make area species curve	Lecturer's explanation, practicum, discussion	Authentic assessment
4.	The students are able to demonstrate understorey vegetation analysis	Lecturer's explanation, practicum, discussion	Authentic assessment
5.	Students are able to demonstrate the succession process identification	Lecturer's explanation, practicum, discussion	Authentic assessment
6.	Students are able to demonstrate understorey diversity analysis	Lecturer's explanation, practicum, discussion	Authentic assessment
7.	Students are able to demonstrate forest architecture profile creating	Lecturer's explanation, practicum, discussion	Authentic assessment
8.	Students are able to demonstrate the natural forest vegetation analysis	Lecturer's explanation, practicum, discussion	Authentic assessment
9.	Students are able to make tree ordination	Lecturer's explanation, practicum, discussion	Authentic assessment
c.	**Competences:**		
1.	Students demonstrate a willingness to participate in the class activities	Lecturer's explanation, discussion	Authentic assessment
2.	Students are able to complete all tasks and participate in class discussion	Lecturer's explanation, discussion, assignment	Authentic assessment

E. Module Content		
List of Topic	**Number of Weeks**	**Contact Hours**
Introduction (Study of Forest Ecology)	1	2
Ecosystem Consept	2	4
Forest as Plant Community	2	4
Dynamic of Plant Community	1	2
Classification of Forest Vegetation	1	2
Forest Formation in the World	1	2
Vegetation Analysis	1	2
Techniques of Tree Type Selection	1	2
Ecological Approach in Critical Land Rehabilitation	2	4

Impact of Forest Disturbance	1	2
Soil Aspect in Forest Ecology	1	2

F. Course Assessments

No.	Assessment Type *)	Schedule (Week Due)	Proportion of the Final Mark
1.	Mid-Term Examination	The 8th Week	35%
2.	Final Examination	The 16th Week	35%
3.	Exercise Report/ Homework	Minimal 7 times in a semester	30%

**) Example: mid-term examination, final examination, quiz, homework, project, etc.*

G. Media Employed

Laptop, LCD, Microphone, White Board, Marker, Pointer

H. Learning Resources

h1. Textbooks:

1. Barnes BV, Zak DR, Denton SR, Spurr SH. 1998. *Forest Ecology*. New York (US): John Wiley & Sons Inc.
2. Cox GW. 1972. *Laboratory Manual of General Ecology Second Edition*, WMC. Publ. Dubuque Iowa.
3. De Santo RS. 1978. *Concept Of Applied Ecology*. Springer Verlag. New York., Heidelberg, Berlin.
4. Ewusie JY. 1980. *Element of Tropical Ecology*. London (UK): Heineman Educational Books Ltd.
5. Misra R. 1968. *Ecology Workbook*. Oxford & IBU. Publ. House, New Delhi, Bombay, Calcuta.
6. Mueller – Dumbois D, Ellenberg DH. 1974. *Aims and Methods of Vegetation Ecology*. New York (US): John Wiley & Sons.
7. Odum EP. 1971. *Fundamentals of Ecology. 3rd ed*. Philadelphia (US): Saunders.
8. Smith DM. 1997. *The Practice of Silviculture: Applied Forest Ecology*. New York (US): John Wiley & Sons Inc.
9. Smith RL. 1986. *Elements of Ecology*. New York (US): Harper & Row Publishers.
10. Soerianegara I, Indrawan A. 2006. *Ekologi Hutan Indonesia*. Laboratorium Ekologi Hutan. Bogor (ID): Fakultas Kehutanan Institut Pertanian Bogor.
11. Turner IM. *The Ecology of Trees*. New York (US): Cambridge University Press..
12. Vickery ML. 1984. *Ecology of Tropical Plant*. New York (US): John Wiley & Sons.
13. Whitmore TC, Burnham CP. 1984. *Tropical Rain Forest of the Far East*. Oxford (UK): Oxford University Press