



Course Module

Silviculture Decision in Site Level

Faculty of Forestry

Mulawarman University

Module name	Silviculture Decision in Site Level
Modul level, if applicable	Doctorate
Code, if applicable	220401903P044
Subtitle, if applicable	-
Courses, if applicable	Regular
Semester(s) in which the module is taught	The course is available in all active teaching semesters
Person responsible for the module	Prof. Dr. Ir. Marjenah, M.P.
Lecturer	Prof. Dr. Ir. Marjenah, M.P. Kiswanto, S.Hut., M.P., Ph.D.
Language	Indonesia
Relation to curriculum	Compulsory course
Type of teaching, contact hours	Direct instruction, discussion, and assignment
Workload	Number of meetings per semester 16 meetings (14 meetings for learning activity, 1 meeting for mid-semester, 1 meeting for final examination) For this course, students are required to meet a minimum of 119 hours per semester, which consist of : - 35 hours for lecture - 42 hours for structured assignments - 42 hours for individual study
Credit points	Credit points: 3 SKS / 4.8 ECTS Details: 1 Credit = 170 min / week 1 Credit = 170 min x 14 week = 2380 min / semester 1 Credit = 39.7 h / semester 1 ECTS = 25 h/ Semester 1 Credit = 1.59 » 1.6 3 Credit = 1.6 x 3 = 4.8 ECTS
Requirements according to the examination regulations	-
Recommended prerequisites	-

Module objectives/intended learning outcomes	Intended Learning Outcome (ILO) Attitude (A) 1. ILO1 (A1) - Internalizing values, norms, and ethics in Knowledge Knowledge (K) 2. ILO2 (K1) - Able to synthesize knowledge acquired from research findings with novelty and its implementation 3. ILO3 (K2) - Able to discover and develop scientific conceptions with novelty value, and able to develop scientific arguments as science solutions Specialized Skills (SS) 4. ILO6 (SS1) - Able to manage data and information to support decision-making processes Content Learning Outcome (CLO) 1. CLO1: Students are able to develop knowledge and make decisions about silvicultural practices at the site level. ILO6 (SS1). 2. CLO2: Students are able to identify and analyze characteristics of tropical rainforests and their ecosystems. ILO2 (K1). 3. CLO3: Students are able to evaluate and analyze silvicultural techniques, including TPTI, SILIN, and residual stand management. ILO6 (SS1). 4. CLO4: Students are able to design and formulate sustainable forest management and agroforestry systems. ILO3 (K2). 5. CLO5: Students are able to develop silviculture applications for climate change mitigation and forest restoration. ILO6 (SS1).
Content	This course provides an in-depth understanding of silvicultural principles, techniques, and decision-making processes essential for sustainable forest management. Students will explore the biological and ecological characteristics of tropical rainforests, as well as various silvicultural systems such as TPTI and SILIN. The course emphasizes practical applications, including residual stand management, logging techniques, and agroforestry methods. A strong focus is placed on land tenure systems, socio-economic factors in forest management, and the role of silviculture in climate change mitigation. Through advanced forest management planning, case studies, and research projects,

	students will develop skills necessary for designing and implementing sustainable forestry practices. 1. Contract and Introduction to Silviculture, Decision-Making, and Land Ownership (1st session) → CLO1 2. Characteristics, Biological, and Ecological Needs of Tropical Rainforests (2nd session) → CLO2 3. Silvicultural Techniques I: TPTI and SILIN Systems (3rd and 4th sessions) → CLO3 4. Residual Stand Management and Logging Techniques (5th session) → CLO3 5. Sustainable Forest Management and Agroforestry Methods (6th and 7th sessions) → CLO4 6. Midterm Examination (UTS) (8th session) → Assessment 7. Forest/Biophysical Socio-Economic and Land Tenure Systems (9th session) → CLO1 8. Silviculture Applications for Climate Change Mitigation (10th session) → CLO5 9. Advanced Silviculture Strategies: Designing Forest Management Plans (11th and 12th sessions) → CLO4 10. Research on Silvicultural Practices: Case Studies and Projects (13th session) → CLO4 11. Research Presentation and Group Projects (14th and 15th sessions) → CLO4 12. Final Examination (UAS) (16th session) → Assessment																																
Study and examination requirements and forms of examination	Evaluation and assessment of the learning process are following scheme 5 in the Academic Regulations of Mulawarman University: <table><tr><th>No</th><th>Objects of Evaluation/Assessment:</th><th>Forms of E/A</th><th>Quantity (%)</th></tr><tr><td>1</td><td>Affective</td><td>Participation</td><td>10</td></tr><tr><td>2</td><td>Laboratory Practice/Fieldwork</td><td>Participation, Group Project Report</td><td>20</td></tr><tr><td>3</td><td>Assignment/Case Study</td><td>Group Presentation</td><td>15</td></tr><tr><td>4</td><td>Project</td><td>Report</td><td>15</td></tr><tr><td>5</td><td>Mid-Semester Test</td><td>Written test</td><td>15</td></tr><tr><td>6</td><td>Final Examination</td><td>Written test</td><td>25</td></tr><tr><td colspan="3">Total</td><td>100</td></tr></table>	No	Objects of Evaluation/Assessment:	Forms of E/A	Quantity (%)	1	Affective	Participation	10	2	Laboratory Practice/Fieldwork	Participation, Group Project Report	20	3	Assignment/Case Study	Group Presentation	15	4	Project	Report	15	5	Mid-Semester Test	Written test	15	6	Final Examination	Written test	25	Total			100
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Media employed	Laptop, LCD																																
Reading list	1. Lampercht, H, 1996. Pertimbangan Silvikultur Di Wilayah Tropik. Silvikultur Hutan Alam di Indonesia. Fakultas Kehutanan Universitas Mulawarman. Samarinda. 2. Oldeman, R. A. A. 1990. Forests: Elements of Silvology. Springer-Verlag Berlin Heidelberg. New York																																

	3. Soekotjo. 2009. Teknik Silvikultur Intensif (SILIN). Gadjah Mada University Press. (Cetakan pertama). Yogyakarta. 4. Weidelt, H.J, 1995 Silvikultur Hutan Alam Tropika. Fakultas Kehutanan Universitas Mulawarman. Samarinda. 5. Whitmore, T.C. 1984. Tropical Rain Forest of The Far East (2nd ed.). Clarendon Press, Oxford. 352 hal. 6. Tata, H.L. dan A. Sasmianto.2016. Prospek Paludikultur Ekosistem Gambut Indonesia. Forda Press. Bogor. 7. Weatherspoon. C.P. 1996. Fire-Silviculture Relationship in Sierra Forest. UtahState University.pp. 1167 – 1176 8. Guilley, E., J. C. Herve., and G. Nepveu. 2004. The Influence of Site Quality, Silviculture and Region on Wood Density Mixed Model in <i>Querqus petraea</i> Liebl. Forest Ecology and Management. Elsevier. Pp. 111 – 121. 9. Mitchell, R. J., J. K. Hiers., J. J. O'Brien., S. B. Jack., and R. T. Engstrom. 2006. Silviculture That Sustain: The Nexus Between Silviculture, frequent, Prescribed Fire, and Conservation of Biodiversity in Longleaf Pine Forests of the Southeasten United Stated. Can. J. For. Res. 36: 2724 – 2736. 10. Navratil, S. 1995. Minimizing Wind Damage in Alternative Silviculture Systems in Boreal Mixedwoods. Canadian Forest Service. Canada. 81 p. 11. Sendak, P. E., J. C. Brissette., and R. M. Frank. 2003. Silviculture Affect Composition, Growth, and Yields and Mixed Northern Conifers: 40-year Results from the Penobscot Experimental Forest. Can. J. For. Res.33. 2116 – 2128. 12. Schutz, J. P. 1999. Close-to-nature-Silviculture: is this concept compatible with species diversity? Forestry, Vol. 72 No. 4. 13. Long, J. N. T. J. Dean., and S. D. Roberts. 2004. Linkages Between Silviculture and Ecology: Examination of Several Important Conceptual Models. Forest Ecology and Management 200 (2004) 249 - 261. Elsevier. 14. Timbal, J. and G. Aussenac. 1996. An Overview of Ecology and Silviculture of Indigenous Oaks in France. Ann. Sci. For (1996) 53. 649 – 661. 15. Shepperd, W. D., and M. A. Battaglia. 2002. Ecology, Silviculture, and Management of Black Hills Ponderosa Pine. USDA Forest Service. 112 p. 16. Baker, J. B., M. D. Cain., J. M. Guldin., P. A. Murphy., and M. G. Shelton. 1996. Uneven-Aged Silviculture for the Loblolly and Shortleaf Pine Forest Cover Types. USDA Forest Service. 75 p.
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