Course Module

Formulation of Silvicultural Systems

Faculty of Forestry

Mulawarman University

Module name	Formulation of Silvicultutral Systems
Modul level, if applicable	Graduates Programme
Code, if applicable	190401802P021
Subtitle, if applicable	
Courses, if applicable	Regular
Semester(s) in wich the module is taught	I (one)
Person resposible for the module	Prof. Dr. Ir. Marjenah, M.P
Lecturer	Prof. Dr. Ir. Marjenah, M.P Ir. Sukartiningsih, M.Sc., Ph.D Kiswanto, S.Hut., M.P., Ph.D
Language	Indonesia
Relation to curriculum	Programme, mandatory
Type of teaching, contact hours	Lecture, 3 lecture contact hours
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 lectures, 42 hours for structured assignment, 42 hours for individual study
Credit points	3 SKS (4.8 ECTS) Details: 1 Credit = 170 min/week 1 Credit = 170 min x 14 week = 2,380 min/semester 1 ECTS = 25 h / semester 1 Credit = 2,380 / 60 / 25 = 1.6 ECTS 2 Credit = 1.6 x 2 = 3.2 ECTS 3 Credit = 1.6 x 3 = 4.8 ECTS
Requirements according to the examination regulations	Have attended not less than 80% class meetings
Recommended prerequisites	

Module objectives/intended learning outcomes	**Intended Learning Outcome** **Knowledge and Understanding** **ILO-1** : Applying scientific ethics, norms, and values of professionalism **Engineering Analysis** **ILO-2** : Mastering specialized knowledge, skills and techniques in the field of forestry and tropical environment and being able to develop innovative theories, models and methods in their field. **Investigation** **ILO-3** : Able to analyze current problems and issues, and assess the ecological, social, and economic impacts of implementing programs in the forestry and tropical environmental sectors. **Engineering Design and Practice** **ILO-4** : Develop research schemes based on inter or multidisciplinary approaches to tropical forestry and the environment, and communicate the results to the public. **Course Learning Outcome** **Knowledge and Understanding** **CLO-1** : Students are able to explain the latest concepts, theories, and methods in forest stand measurement and quality improvement. **Engineering Analysis** **CLO-2** : Students are able to analyze the ecological, social, and economic impacts of policies or programs related to forest stand measurement and quality improvement. **Investigation** **CLO-3** : Students are able to design research schemes using interdisciplinary or multidisciplinary approaches to address challenges in forest stand measurement and quality improvement. **Engineering Design and Practice** **CLO-4** : Students are able to lead a team to complete tasks or projects in the forestry and tropical forest environment sector, particularly in forest stand measurement and quality improvement, in a responsible manner.
Content	This course discusses the principles, theories, and applications of designing responsible and sustainable silvicultural systems in tropical forests. Students will learn various techniques in forest management, including selecting appropriate silvicultural systems based on ecological, social, and economic characteristics. Additionally, this course emphasizes the integration of scientific ethics, professional norms, and technological innovations in the rehabilitation, conservation, and management of forest resources. Students will also

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<tr><td></td><td>be trained to analyze current issues, evaluate the impacts of silvicultural system implementation, and conduct research using inter- or multi-disciplinary approaches.

After attending this course, students have the ability to:
1. understand the fundamental concepts of tropical forest ecology and ecosystem processes. (CLO-1) (CLO-2)
2. master mapping techniques and spatial data analysis for managing tropical forests. (CLO-2)
3. apply innovative methods in the rehabilitation and conservation of tropical forests. (CLO-2)
4. design forest resource management strategies based on ecological principles and sustainability. (CLO-2)
5. analyze current issues related to the implementation of silvicultural systems in the forestry sector. (CLO-3)
6. assess the ecological, social, and economic impacts of silvicultural system implementation. (CLO-3)
7. develop silviculture-based solutions to address challenges and issues in tropical forest management. (CLO-3)
8. design research proposals using an inter- or multi-disciplinary approach in forestry. (CLO-4)
9. use relevant research methods for tropical forestry studies. (CLO-4)
10. analyze data and compile research reports systematically. (CLO-4)
11. present research findings effectively through presentations, scientific articles, or other publication media. (CLO-4)</td></tr>
<tr><td>Study and examination requirements and forms of examination</td><td>Evaluation and assessment of the learning process are following scheme 5 in the Academic Regulations of Mulawarman University:
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<tr><th>No.</th><th>Objects of Assessment</th><th>Forms of Assessment</th><th>Quantity (%)</th></tr>
<tr><td>1</td><td>Affective</td><td>Participation</td><td>10</td></tr>
<tr><td>2</td><td>Assignment/Case study</td><td>Group presentation</td><td>20</td></tr>
<tr><td>3</td><td>Project</td><td>Presentation</td><td>15</td></tr>
<tr><td>4</td><td>Mid-semester test</td><td>Written test</td><td>15</td></tr>
<tr><td>5</td><td>Final semester test</td><td>Written test</td><td>25</td></tr>
<tr><td colspan="3">TOTAL</td><td>100</td></tr>
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<tr><td>Media employed</td><td>Class, MS. Powerpoint, Ms.Word, Laptop, LCD</td></tr>
<tr><td>Reading list</td><td>1. Ashton, M.S., & Kelty, M.J. (2018). The Practice of Silviculture: Applied Forest Ecology (10th Edition). Wiley.</td></tr>
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	2. Smith, D. M., Larson, B.C., Kelty, M.J., & Ashton, P. M. S. (1997). The Practice of Silviculture (9th edition). Wiley. 3. Lamprecht, H. (1989). Silviculture in The Tropics: Tropical Forest Ecosystems and their Tree Species (Possibilities and Methods for their Long-term Utilization. 4. Nyland, R. D. (2016). Silviculture: Concepts and Applications (3rd edition). Waveland Press. 5. Dawkins, H. C., & Philip, M. S. (1998). Tropical Moist Forest Silviculture and Management: A History of Success and Failure. CAB International. 6. Weber, M., & Stanturf, J. A. (2016). Restoration of Degraded Forest Ecosystems. CRC Press.