University of Gadjah Mada

Faculty of Forestry

Study Program of Doctor in Forestry Science

Module Handbook

Name (Code)	: Integrated Spatial Management (KTDM22807)
ECTS | Type | Status	: 7.5 | Class lecture | Elective
Semester | OfL:OnL Ratio | LMS	: 2 | 60:40 | elok.ugm.ac.id
Pre-Requisite	: -
Description of content	: This course discusses the theories and methods of optimal spatial management and the interrelationship of its components in forest resource management as part of the landscape; concepts/theories and techniques of land evaluation and forestry spatial planning at the macro-regional-unit-site scale in published research results; tools in planning and monitoring space and land allocation in accordance with the biophysical and social conditions of the site; and theories and methods of measuring the role of forestry spatial planning in erosion control and water availability.
Course Outcomes and PLO mandated	Finishing this course, student will be able to criticize apply theories, methods, and knowledge in terms of optimal spatial planning and the interrelationship of its components in the management of forest resources as part of the landscape (CO1/PLO3), to discover, communicate, and develop concepts/theories and techniques of land evaluation and forestry spatial planning at the macro-regional-unit-site scale in published research results (CO2/PLO4), to apply concepts, select, and critique tools in planning and monitoring land and space allocation appropriately in accordance with biophysical and social site conditions (CO3/PLO4), and to explain and criticize theories and methods of measuring the role of forestry spatial planning in erosion control and water availability (CO4/PLO7).
Lecturer(s)	1. Dr. Senawi 2. Dr. Emma Soraya
Workload	: Total workload per semester is for 14 weeks, with weekly activities: 2*(50' lectures, 60' structured activities, 60' independent study), and 2 mid exam and final exam weeks.
Learning Method	: Class Lecture and Discussion
Student Learning Experience	: Actively discuss the class material and research cases, structured assignment, group work, quiz, material reflection, review of literature and problem in forestry sectors

Mapping CO-syllabus

CO	Syllabus	Learning form	Meetings
1	1. Introduction - Importance of ATRK 2. Watershed management unit planning 3. Land-use policy in Indonesia	Class lecture and discussion	3
2	4. Bio geophysical data acquisition and ecological spatial modeling 5. Land Use and Function Direction 6. Evaluation of SDL for land suitability analysis 7. Strategies for assessing changes in designation and changes in function of forest areas 8. Strategy for improving land and environmental quality index	Class lecture and discussion	5
3	9. Stakeholder mapping and analysis 10. Tools for land-use allocation models 11. Land-use optimization 12. Spatial data for land-use allocation: sources and analysis 13. Land cover/use change modeling	Class lecture and discussion	5
4	14. Ecological impacts of land-use	Class lecture and discussion	1

Assessment method

Base of Evaluation	Component of Evaluation	CO1	CO2	CO3	CO4	Total (%)
Participative activity	Assignment			√		15
Cognitive & Psychomotoric	Mid exam	√	√			50
Case Study result	Final exam/ presentation	√		√	√	35

References

1. Heathcote, I.W., 2009. Integrated watershed management: principles and practice. John Wiley & Sons.
2. Loures, L.C., 2019. Introductory chapter: land-use planning and land-use change as catalysts of sustainable development in Land use-assessing the past, envisioning the future.
3. Randolph, J., 2004. Environmental land use planning and management. Island Press
4. Maryudi, A. 2015. The political economy of forest land-use, the timber sector, and forest certification in Romero, C., Putz, F. E., Guariguata, M. R., Sills, E. O., & Maryudi, A. (Eds.). (2015).

	5. *The context of natural forest management and FSC certification in Indonesia* (Vol. 126). CIFOR. 6. Bendtsen, E.B., Clausen, L.P.W. and Hansen, S.F., 2021. *A review of the state-of-the-art for stakeholder analysis with regard to environmental management and regulation*. Journal of Environmental Management, 279, p.111773. 7. Senawi, 2007. Permodelan Spasial Ekologis untuk Optimalisasi Penggunaan Lahan. Daerah Aliran Sungai, Studi Kasus di DAS Solo Hulu, Disertasi.