



MODULE HANDBOOK

Remote Sensing for Land Ecosystem

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Undergraduate Study Program for Geography
Faculty of Mathematics and Natural Sciences
Universitas Indonesia

Remote Sensing for Land Ecosystem

Module designation	Remote Sensing for Land Ecosystem
Semester(s) in which the module is taught	Sixth (6th) Semester
Person responsible for the module	Dr. Supriatna, M.T.
Lecturer	<ol style="list-style-type: none"> 1. Dr. Supriatna, M.T. 2. Dr. Masita DMM, M.Eng. 3. Iqbal Putut A, S.Si., M.Sc., Ph.D. 4.
Language	Bahasa Indonesia
Relation to curriculum	Elective
Teaching methods	Student-centered Learning and combination with Cooperative Learning
Workload (incl. contact hours, self-study hours)	<ol style="list-style-type: none"> 1. Lectures: 100 minutes per week per semester 2. Assignment: 120 minutes per week per semester 3. Independent study: 120 minutes per week per semester 4. Minutes x weeks x semester: $340 \times 14 \times 1 = 4760$ minutes per semester 5. Midterm Examination: 100 minutes per semester 6. Final Examination: 100 minutes per semester 7. Total workload per semester: 4950 minutes / 82 hours 40 minutes
Credit points	2 (Two)
Required and recommended pre-requisites for joining the module	<ol style="list-style-type: none"> 1. Cartography 2. Cartography Lab 3. Remote Sensing 4. Remote Sensing Lab
Module objectives/intended learning outcomes	Able to study, analyze and synthesize remote sensing applications for spatial and temporal land ecosystem studies, through spatial studies on landscape ecosystems, remote sensing and GIS technology for spatial review monitoring of closure / land use, vegetation characteristics, coastal and marine environment ecosystems, wetlands (Wetland) / swamp, estuary, and lake / situ ecosystems.
Content	<ol style="list-style-type: none"> 1. Introduction to remote sensing / GIS Land Ecosystem 2. Basic concepts of the landscape ecosystem. 3. The concept and study of spatial landscape patterns. 4. Study of the landscape model on the ecosystem. 5. Analysis and synthesis monitoring of land closure with GIS / remote sensing technology. 6. Analysis and synthesis of vegetation characteristics in various forms of land with remote sensing / GIS technology. 7. Analysis and synthesis of monitoring of coastal and marine ecosystems with remote sensing / GIS technology. 8. Analysis and synthesis of monitoring of wetland ecosystems with remote sensing / GIS technology. 9. Analysis and synthesis of estuary ecosystem monitoring with remote sensing / GIS technology. 10. Analysis and synthesis monitoring of lake / reservoir ecosystems with GIS / remote sensing technology.
Examination forms	-

<p>Study and examination requirements</p>	<ol style="list-style-type: none"> 1. Individual Score (35%) 2. Group and Presentation Score (20%) 3. Quiz (10%) 4. Mid Examination (15%) 5. Final Examination (20%)
<p>Reading list</p>	<p>Monica G. Turner Robert H. Gardner (2015). Landscape Ecology in Theory and Practice (Second Edition). Springer New York Heidelberg Dordrecht London © Springer-Verlag New York.</p> <p>Ned Horning, Julie A. Robinson, Eleanor J. Sterling, Woody Turner, and Sacha Spector (2020-online). Remote Sensing for Ecology and Conservation: A Handbook of Techniques. Oxford University Press.</p> <p>[3] Lopez, Ricardo, and Frohn, Robert (2019). Remote Sensing for Landscape Ecology: New Metric Indicators. CRC Press</p> <p>Latifi, Hooman and Valbuena, Ruben (2019). 3D Remote Sensing Applications in Forest Ecology. Mdpi</p> <p>Tarolli, Paolo and Mudd, Simon (2020). Remote Sensing of Geomorphology. Springer</p> <p>Almo Farina (1998). Principles and Methods in Landscape Ecology. Chapman and Hall, 2-6 Boundary Row, London SE1 8HN, HK.</p> <p>Charles W. Finkl Christopher Makowski (editors) (2014). Remote Sensing & Modeling: Advances in Coastal and Marine Resources. Switzerland: Springer International Publishing.</p> <p>Berbagai Paper Internasional: Modelling landscape-scale habitat use using GIS and remote sensing.</p>