



USK
UNIVERSITAS
SYIAH KUALA

FACULTY OF AGRICULTURE
DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM

MODULE HANDBOOK

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| Module designation | Practicum of Geographic Information System (SSOL2035) |
| Semester(s) in which the module is taught | 3 rd semester |
| Person responsible for the module | Muhammad Rusdi, S.P., M.P. |
| Language | Indonesian, English |
| Relation to curriculum | Compulsory module for Soil Science Department |
| Teaching methods | Practice, lecture, team based project |
| Workload (incl. contact hours, self-study hours) | ✓ 170 minutes of practice per week (field/laboratory 50 minutes; structured learning 60 minutes; 60 minutes self-study) |
| Credit points | 1 SKS = 1.6 ECTS |
| Required and recommended prerequisites for joining the module | - |
| Module objectives/intended learning outcomes | <ul style="list-style-type: none">✓ Students understand the utilization of geospatial data processing applications.✓ Students are able to utilize and develop GIS products and integrate them across various fields. |
| Content | This course covers spatial and attribute data sorting, spatial data input techniques, and skills in performing geocorrection. It also emphasizes the ability to lead and work in teams, as well as to work independently and responsibly in the field of Geographic Information Systems (GIS). Students are expected to demonstrate spatial communication skills and relevant soft skills, and to formulate strategies for optimizing the implementation of tasks using GIS products. |
| Exams and assessment formats | Case method, team based project |
| Study and examination requirements | <ul style="list-style-type: none">✓ Case method: 50%✓ Team based project: 50% |

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| Reading list | <ol style="list-style-type: none"> 1. Rahajo B dan M Ihsan. 2019. Tutorial ArcGIS Desktop, Geosiana Press 2. Prahasta, E. 2019. Konsep-konsep dasar sistem informasi geografis, Penerbit ANDI 3. Kang-Tsung, Chang. 2016. Introduction to Geographic Information Systems. Edisi ke-8. Mc Graw-Hill Education. Singapore 4. Longley, P. A., & Cheshire, J. A. (2017). Geographical information systems. In The Routledge Handbook of Mapping and Cartography (pp. 251-258). Routledge. 5. Burrough, P. A., McDonnell, R. A., & Lloyd, C. D. (2015). Principles of geographical information systems. Oxford university press. 6. Sahu, N., Reddy, G. P., Kumar, N., & Nagaraju, M. S. S. (2015). High resolution remote sensing, GPS and GIS in soil resource mapping and characterization-A Review. <i>Agricultural Reviews</i>, 36(1), 14-25. 7. Minasny, B., & McBratney, A. B. (2016). Digital soil mapping: A brief history and some lessons. <i>Geoderma</i>, 264, 301-311. 8. LANKI, D. A. (2024). Geographic Information System (GIS) application in soil fertility management: a review. <i>Journal of Global Agriculture and Ecology</i>. 9. Islam, M. A., Hasan, M. A., & Farukh, M. A. (2017). Application of GIS in general soil mapping of Bangladesh. <i>Journal of Geographic Information System</i>, 9(5), 604-621. |
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