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| Module designation | *Analysis of Soil, Water, and Plants* |
| Module level, if applicable | *Bachelor* |
| Code, if applicable | *PNT20193222* |
| Subtitle, if applicable |  |
| Courses, if applicable | 1. *Introduction* 2. *Soil Analysis* 3. *Specific Soil Analysis* 4. *Fertilizer Analysis* 5. *Water Analysis* 6. *Plant Analysis* 7. *Data Interpretation* |
| Semester(s) in which the module is taught | *Even* |
| Person responsible for the module | *Dr. Ir. Eko Hanudin, M.S.* |
| Lecturer | *Dr. Ir. Eko Hanudin, M.S.*  *Dr. Sri Nuryani Hidayah Utami, M.P* |
| Language | *Bahasa/Indonesian language* |
| Relation to curriculum | *Elective* |
| Type of teaching, contact hours | *Lecture, practical, presentation* |
| Workload | *2/1 SKS or 3,02/1,51 ECTS* |
| Credit points |  |
| Requirements according to the examination regulations | *. Presence must be 70% of all meetings.*  *Has to accomplished all the assignments.* |
| Recommended prerequisites | *-* |
| Module objectives/intended learning outcomes | *Students can understand and explain the basic principles of soil, water, fertilizer and plant analysis*  *Students can analyze soil, water, fertilizers and plants qualitatively in the field and quantitatively in the laboratory*  *Students can interpret the data from the analysis of soil, water, fertilizers, and plants to explain the process of soil formation and classification*  *Students can interpret data from analysis of soil, water, fertilizers, and plants for the purpose of land evaluation for improving soil fertility and land reclamation* |
| Content | 1. *Introduction* 2. *Soil Analysis* 3. *Specific Soil Analysis* 4. *Fertilizer Analysis* 5. *Water Analysis* 6. *Plant Analysis* 7. *Data Interpretation* |
| Study and examination  requirements and forms of examination | *Assesment Presentasi/UTS/UAS* |
| Media employed | *Text, Presentation, Visual & Audio Web.* |
| Reading list | 1. *Buol, S.W., Southard, R.J., Graham, R.C., and McDaniel, P.A. 2003. Soil Genesis and Classification. Fifth edition. Iowa State Press.* 2. *Isbell, R.F. (Raymond Frederick). 2001. The Australian soil classification. CSIRO PUBLISHING PO Box 1139 (150 Oxford Street) Collingwood, VIC 3066 Australia* 3. *Foth, H.D. 1990. Fundamentals of soil science. 8th ed. John Wiley S. Son.* 4. *Kononova, M. 1966. Soil Organic Matter Its Nature, Its Role in Soil Formation and in Soil Fertility* 5. *Miller, R.W. & RL. Donahue. 1990. Soils. An Introduction to Soils and Plant Growth. Prentice-Hall New Jersey.* 6. *USDA. 2010. Keys to Soil Taxonomy. Eleventh edition.* 7. *USDA. 2009. Soil Taxonomy - A Basic System of Soil Classification for Making and Intrepeting Soil Surveys. Second Edition.* 8. *Wilding, L. P., Smeck, N.E., and Hall, G.F. 1984. Pedogenesis and Soil Taxonomy. Elsevier Science Publisher. New York.* 9. *Eswaran, H., Rice, T., Ahrens, R., and Steward, B.A. 2003. Soil Classification - A Global Desk Reference. CRC Press. Washington.* 10. *Van Breemen N., and Buurman, P. 2003. Soil Formation. Second Edition. Kluwer Academic Publisher. New York.* 11. *Certini, G. and Scalenghe, R. 2006. Soils - Basic Concepts and Future Challenges. Cambridge University Press. UK.* 12. *Scaetzel, R. and Anderson, S. 2005. Soils Genesis and Geomorphology. Cambridge University Press. UK.* 13. *Shoji, S. Nanzyo, M., and Dahlgren, R. 1993. Volcanic Ash Soils - Genesis, Properties, and Utilization. Elsevier* |