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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*
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| 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*
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| Study and examinationrequirements 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*
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