Module Description/Course Syllabi

Study Program : Bachelor Program

(S1) Faculty of Agriculture

University of Andalas

1. ***Course number and name***

PIT621 05 Soil Chemistry

2. ***Credits and contact hours/Number of ECTS credits allocated***

3 credits (2 classes, 1 practicum) / 4.369

3. ***Instructors and course coordinator***

1. Prof.Dr.Ir., Herviyanti,, MS
2. Prof.Dr.Ir., Hermansah,, MS. MSc,
3. Prof. Dr.rer.nat.Ir., Syafrimen Yasin,, MS. MSc
4. Dr.Ir., Teguh Budi Prasetyo, MS,
5. Dr., Gusmini SP. MP
6. Dr., Mimien Harianti, SP. MP
7. Nofrita Sandi, , SP. MP

4. ***Text book, title, outhor, and year***

1. Anwar and Sudadi. 2012. Soil Chemistry Introduction, IPB Press. (PDF) Kimia Tanah (academia.edu)
2. Bohn, N.B.L. and G.A.O Connor. 2001. Soil chemistry. John Wiley and Sons, New York
   Soil chemistry : Bohn, Hinrich L., 1934- : Free Download, Borrow, and Streaming : Internet Archive
3. El Azzouzi, H., M. El Madani, M. Mekkaoui, M. A. El Belghiti, M. El M'Rabet, H. Mountacer, A. El Hourch, A. Zrineh, M. El Azzouzi. (2010). ResearchGate
4. *Herviyanti, Maulana, A., Lita, A.L., Prasetyo, T.B., Monikasari, M., Ryswaldi, R. (2022). Characteristics of inceptisol ameliorated with rice husk biochar to glyphosate adsorption. Sains Tanah Journal of Soil Science and Agroclimatology, 19(2): 230-240. https://dx.doi.org/10.20961/stjssa.v19i2.61614*
5. *Herviyanti, H., Maulana, A., Harianti, M., Lita, A.L., Prasetyo, T.B., Juwita, P., Kurnianto, R.T. and Yasin, S. 2024. Effect of glyphosate contamination on surface charge change and nutrients of degraded Inceptisols ameliorated with sub-bituminous coal. Journal of Degraded and Mining Lands Management 11(2):5135-5145, doi:10.15243/jdmlm.2024.112.5135.*
6. Sihotang, Rubiana (2021) Pengaruh larutan aktivator, waktu kontak dan pH larutan dalam pembuatan biosorben kulit buah aren (*Arenga pinnata*) untuk adsorpsi timbal dalam limbah cair tekstil, *3*(5), 1181. https://doi.org/10.36418/syntax-idea.v3i5.1209
7. Stevenson, F.J. (1994). *Humus Chemistry, Genesis, Composition, Reactions*. 2nd ed. John Wiley & Sons, Inc., USA

Humus chemistry : genesis, composition, reactions : Stevenson, F. J : Free Download, Borrow, and Streaming : Internet Archive
8. Sudirja R., Mahfud Arifin, dan Benny Joy. (2015). Adsorpsi Paraquat dan Sifat Tanah pada Tiga Subgrup Tanah Akibat Pemberian Amelioran. *Jurnal Agricultura*, *26*(1): 41-48
9. Tan K.H. 2011. Principle of Soil Chemistry, ed. IV, Marcel Dekker, N.Y Principles of Soil Chemistry, Fourth Edition - Kim H. Tan - Google Buku
10. Tan, KH. 2014. Humic Matter in Soil and the Environment. Marcel Dekker, N.Y. Humic Matter in Soil and the Environment - Google Books
11. Tan,K.H. 2009. Environmental Soil Science, ed. III, Marcel Dekker, N.Y, Basel Environmental Soil Science - Google Books

5. *Specific course information*

A. Brief description of the content of the course (catalog description)

Studies the chemical relationships between elements in soil, both in the environment and in solids. This course also discusses chemical reactions that occur in the soil solution and at the contact surface between the solution and soil solids

B. ***Level of course unit (according to EQF: first cycle Bachelor, second cycle Master)***

First Cycle Bachelor

C. ***Semester when the course unit is delivered***

Even Semester

D. ***Mode of delivery (face-to-face, distance learning)***

Face to face

6. *Intended Learning Outcomes (CPL)*

ILO-1: Able to apply basic agricultural sciences widely in overcoming agricultural problems for sustainable agricultural development (P)

P1.1. Explain agricultural sciences related to soil science

P1.2 Analyze agricultural problems with a soil science approach and agricultural sciences in general

P1.3. Apply basic sciences and soil science in solving land and environmental problems for agricultural development

ILO-2: Able to identify, analyze, and solve land problems in improving productivity and quality of agricultural products for sustainable agricultural development

P2.1. Characterizing soil fertility (physics, chemistry, soil biology)

ILO-3: Able to use various methods for soil and crop analysis appropriately in land resource management

P3.1 Using laboratory equipment for soil analysis and follow-up crops with SOPs

P3.2 Able to analyze soil and plants precisely, meticulously using the latest methods

7. *Course Learning Outcomes (CPMK)* *ex. The student will be able to explain the significance of current research about a particular topic.*

1. Explain agricultural sciences related to soil science

2. Analyze agricultural problems with a soil science approach and agricultural sciences in general
3. Apply basic sciences and soil science in solving land and environmental problems for agricultural development
4. Characterize soil fertility (physics, chemistry, soil biology)
5. Using laboratory equipment for soil analysis and follow-up plants with SOPs

Able to analyze soil and plants precisely, meticulously using the latest methods

8. ***Learning and teaching methods***

Cooperative Learning and Case Method Learning

9. ***Language of instruction***

Indonesian

10. ***Assessment methods and criteria***

Summative Assessment :

1. Assignment
2. UTS
3. UAS
4. Internship

Formative Assessment:

1. Minutes paper