



## Module Description/Course Syllabi

Study Program : S1 Undergraduate Program  
Faculty of Agriculture  
University of Andalas

### 1. Course number and name

PIT611 02 Soil Physics

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

3 credits (2 classes, 1 practicum)

### 3. Instructors and course coordinator

Prof. Dr. Ir. Yulnafatmawita, MSc,  
Dr.Ir. Adrinal, MS,  
Ir. Irwan Darfis, MP  
Ir. Junaidi,, MP

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

1. Brady, N. 1984. Soils, an Introduction to soils and plant growth. Book.
2. Dept. of Agriculture, Univ. of Queensland, 1999, Practical Manual: Soil physics. Departemen of Agriculture University of Queensland, Australia. 44 hal. Book
3. Hillel, D. 1980. Principle of Soil Physics, Academic Press. Book
4. Luki, U. 2016. Diktat. Department of Soil Science, Faculty of Agriculture, Andalas University, Padang, 31 p.
5. LPT, Bogor. 2009. Guide to soil physics analysis. Dept. of Agriculture Balitbangtan, LPT Bogor.47 p.
6. Marshal, T.J., Holmes, J.W., and Rose, C.W. 1996. Soil Physics. 3rd edition, Cambridge univ. press. 453 pp.
7. Methods of Soil Analysis Part 1 - Physical and mineralogical methods. 1996. 2nd ed. Edited by A. Klute. No.9 ASA, SSSA Publication. 1188 pp.
10. McLaren, R.G. and Cameron, K.C. (1996). Soil science, sustainable production and environmental protection. New Ed. Oxford Univ. Press, Inc., Auckland, 304.
11. So, H.B., Kirchof, G., and Bennet, B. B. 1994. Soil physics laboratory manual. Dept. of Agric. Univ. of Queensland. Brisbane, 97 hal.
12. SSSA Special Publication # 21. 1997. Soil testing, sampling, correlation, calibration, and interpretation. Edited by J.R. Brown. SSSA Inc. Madison, 144 pp.
13. SSSA Special Publication # 25. 1990. Scaling in soil physics. Edited by D. Hillel and D.E.Elrick. SSSA Inc., Madison, 122 pp.
14. Yulnafatmawita. 2023. Dasar-Dasar Fisika Tanah. Bengkulu. Andhara Grafika

### 5. Specific course information

#### *Brief description of the content of the course (catalog description)*

- a. Able to explain the role of soil physics in determining the level of soil fertility in agriculture

b. Able to calculate soil physical data c. Able to evaluate and maintain the physical fertility of the soil.
<b>B. Level of course unit (according to EQF: first cycle Bachelor, second cycle Master)</b>
First Cycle Bachelor
<b>C. Semester when the course unit is delivered</b>
Even Semester
<b>D. Mode of delivery (face-to-face, distance learning)</b>
Face to face
<b>6. Intended Learning Outcomes (CPL)</b>
ILO 2: Able to identify, analyze, and solve land problems in improving productivity and quality of agricultural products for sustainable agricultural development PI 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 PI 1 : Using laboratory equipment for soil analysis and follow-up plants with SOP PI 2: Able to analyze soil and plants precisely, meticulously using the latest methods
ILO 4: Able to apply their professional responsibilities to make decisions in land and environmental management PI 1 : Evaluate the properties and characteristics of the soil
<b>7. Course Learning Outcomes (CPMK) ex. The student will be able to explain the significance of current research about a particular topic.</b>
1. Characterizing soil fertility (physics, chemistry, soil biology)
2. Using laboratory equipment for soil analysis and milk crops with SOPs
3. Able to analyze soil and plants precisely, meticulously using the latest methods
4. Assessing soil properties and features
<b>8. Learning and teaching methods</b>
Cooperative Learning and Problem Based Learning
<b>9. Language of instruction</b>
English
<b>10. Assessment methods and criteria</b>
<b>Summative Assessment :</b>
1. Assignment
2. UTS
3. UAS
4. Internship

**Formative Assessment:**

1. Minutes paper