



Module Description/Course Syllabi

Study Programme : Magister of Soil Science

Faculty of Agriculture

Universitas Andalas

1. Course number and name

MIT 614 Soil and Environment

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

3 sks (2-1)

3. Instructors and course coordinator

1. Prof.Dr.Ir. Hermansah, MS.MSc; 2. Dr.Ir. Syafrimen Yasin, MS.MSc

4. Text book, title, outhor, and year

2. Malcolm E. Sumner, 1999. Soil Science Handbooks, manuals. ISBN 0-8493-3136-6
3. Huang.PM, Iskandar IK. Soils and Ground Water Pollution and Remediation.
4. Manahan, Stanley.E. 2000. Environmental Chemistry
5. John L.Havlin. James D Beaton. Samuel L. Tisdale. Werner L.Nelson.1999.Soil Fertility and Fertilizers. An Introduction to Nutrient Management
6. Hermansah, dan tim. 2014. Strategi dan Rencana Aksi REDD plus (SRAP)REDD + di Sumatra Barat
7. Morgan, R. P. C. 1979. Soil Erosion. Longman Group Ltd., New York
8. Peraturan Pemerintah No. 37 Tahun 2012. Pengelolaan Daerah Aliran Sungai 9. Himpunan Peraturan Perundang-Undangan Bidang AMDAL. Seri III. Keputusan Kepala Bapedal, Keputusan MENLH dan Peraturan MENLH.

5. Specific course information

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

In this course, students learn about the understanding and principles of ecology, ecosystems, agroecology, problems and threats of land and environmental degradation, biogeochemical cycles, deforestation and its impact on soil and the environment, soil, water and air conservation, factors affecting water systems, sustainable farming systems and land management. In various typologies (rice fields, dry land and peat), predicting soil and environmental damage, students learn to observe and formulate soil and environmental problems and make solutions and can write them in a paper and presentations and discussions.

B. Course Content

Week Course Content

- 1 Introduction Basic principles of ecology, ecosystem, and agroecology
- 2 Formation and development of Soil in the tropical region
- 3 Forest ecosystems: classification and function.
- 4 Biogeochemical and hydrological cycles
- 5 Deforestation: the process and the impact on soil and environment
- 6 Air pollution: the causes and the impact on soil, vegetations, and environment
- 7 Agroforestry farming system
- 8 Mid exam
- 9 Sustainable farming system
- 10** Sustainable dryland management
- 11**
- 12 Sustainable lowland management
- 13 Peatland management
- 14 Management of ex. mining land
- 15 Sustainable and Integrated pest management
- 16 Final exam

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 : An ability to analyze and interpretate nature and characteristics of many soils indetermining the potency and the threat of the land and environment resources PI 3 : An ability to interpretate soil data
ILO 2 : An ability to classify soil, to evaluate land capabiity and suitability, as well as todetermine the alternative utilization for sustainable agriculture and environment PI 1 : An ability to classify soil properties PI 3 : An ability to determine suitable land use managemen
7. Course Learning Outcomes (CPMK) ex. The student will be able to explain thesignificance of current research about a particular topic.
a. Students will be able to interpretate data of many soils
b. Students will be able to use soil data to classify soils based on some methods of soil classification
c. Students will be able to determine suitable land management to reach sustainable agriculture and environment
8. Learning and teaching methods

Lectures and discussions

9. Language of instruction

Bahasa Indonesia and English (English Class)

10. Assessment methods and criteria

Summative Assessment :

1. Mid Semester : 30%
2. Final Semester : 30%
3. Presentation : 10%
4. Assignment : 15%

Process Assessment:

1. Interpersonal dimension skill : 5%
2. Intrapersonal attributes softskill ; 5 %
3. Dimensions of attitudes and values : 5%