



USK
UNIVERSITAS
SYIAH KUALA

FACULTY OF AGRICULTURE
DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM

MODULE HANDBOOK

Module designation	Soil and Plant Analysis (SSOL6010)
Semester(s) in which the module is taught	6 th semester
Person responsible for the module	Dr. Ir. Muyassir, M.P.
Language	Indonesian, English
Relation to curriculum	Elective module for Soil Science Department
Teaching methods	Lecture, small group discussion, presentation
Workload (incl. contact hours, self-study hours)	<ul style="list-style-type: none"> ✓ 100 minutes lecture and discussion per week ✓ 120 minutes structured tasks per week ✓ 120 minutes learn to be independent per week
Credit points	2 SKS = 3.2 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	<ul style="list-style-type: none"> ✓ Students are able to describe the structure of the laboratory space and identify various laboratory equipment along with their functions. ✓ Students are able to perform representative soil and plant sampling and conduct accurate laboratory analyses of soil and plant samples. ✓ Students are able to prepare specific chemical reagents for laboratory analysis and utilize laboratory data to develop fertilizer recommendations.
Content	This course introduces students to the fundamental concepts and practices of soil and plant laboratory analysis. Topics include laboratory design and layout, identification and function of laboratory equipment, safety regulations, and chemical management. Students will gain practical skills in representative sampling techniques for soil and plants, preparation of chemical solutions, and execution of basic technical laboratory analyses. The course covers key methods in soil chemical, physical, and biological analysis, as well as plant and food nutrient analysis. Emphasis is placed on the interpretation of laboratory data to support agronomic decision-making and fertilizer recommendations.
Exams and assessment formats	Quiz, Assignments, Midterm exam, Final exam
Study and examination requirements	<ul style="list-style-type: none"> ✓ Assignments: 20% ✓ Quiz: 20% ✓ Midterm exam: 30% ✓ Final exam: 30%

Reading list	<ol style="list-style-type: none"> 1. Jones, J., 2018. Soil analysis handbook of reference methods. CRC press. 2. Marschner, P. and Rengel, Z., 2023. Nutrient availability in soils. In: Marschner's Mineral Nutrition of Plants. Elsevier. pp.499–522. 3. Tate, R.L.. 2021. Soil Microbiology. John Wiley and Sons, Inc 4. Eviati dan Sulaiman. 2020. Petunjuk Teknis Analisis Kimia Tanah, Tanaman, Air dan Pupuk. Balai Penelitian Tanah. Kementerian Pertanian 5. Sulaeman, Suparto, Eviati. 2019. Petunjuk Teknis Analisis Kimia Tanah, Tanaman, Air, Dan Pupuk. Badan Penelitian dan Pengembangan Pertanian Departemen Pertanian. Bogor 6. Jones, J. R. (2012). Plant nutrition and soil fertility manual. CRC press. 7. Rakshit, A., Ghosh, S., Chakraborty, S., Philip, V., & Datta, A. (Eds.). (2020). Soil analysis: recent trends and applications. Singapore: Springer. 8. Jones, J. (2018). Soil analysis handbook of reference methods. CRC press. 9. Hazelton, P., & Murphy, B. (2016). Interpreting soil test results: What do all the numbers mean?. CSIRO publishing.
--------------	---