



USK
UNIVERSITAS
SYIAH KUALA

FACULTY OF AGRICULTURE
DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM

MODULE HANDBOOK

Module designation	Practicum of Soil and Water Pollution (SSOL3051)
Semester(s) in which the module is taught	5 th Semester
Person responsible for the module	Ir. T. Alvisyahrin, M.Sc, Ph.D
Language	Indonesian, English
Relation to curriculum	Compulsory module for Soil Science Department
Teaching methods	Practice, lecture, presentation
Workload (incl. contact hours, self-study hours)	✓ 170 minute of practice per week (field/laboratory 50 minutes; structured learning 60 minutes; 60 minutes self-study)
Credit points	1 SKS = 1.6 ECTS
Required and recommended prerequisites for joining the module	SSOL1002
Module objectives/intended learning outcomes	<ul style="list-style-type: none"> ✓ Students can understand and identify the causes and impacts of soil and water pollution, as well as the types of pollutants. ✓ Students possess the ability to apply the R3 concept (Reduce, Reuse, Recycle) and to manage waste into useful products.
Content	<ol style="list-style-type: none"> 1. Definition of pollution 2. Forms and processes of pollution, and their consequences (general) 3. Cases of land and environmental pollution in Indonesia 4. Water pollution and its control, assessment, and measurement techniques 5. Air pollution, processes, consequences, assessment, and prevention techniques 6. Waste management techniques using the 4R method (reduce, reuse, recycling, and reutilization) 7. Bioremediation and phytoremediation 8. Factory visit: Solid and liquid waste management techniques at the factory/industrial scale 9. Presentation of field trip results
Exams and assessment formats	Assignment, Practicum Report, Final Practicum Exam
Study and examination requirements	✓ Team Based- Project: 100%

Reading list	<ol style="list-style-type: none">1. Simon Pascucci. 2016. Soil Contamination. Italian National Research Council. Italia.2. Lal, R. et al. 2020 Methods for Assessment of Soil Degradation. CRS Press, Washington DC.3. Kristanto, M. 2007. Ekologi Industri. Andi Ofset Jakarta.4. European Commission. 2018. Soil Contamination: Impact on Human Health.5. FAO. 2018. Soil Pollution. FAO. Rome
--------------	---