



USK
UNIVERSITAS
SYIAH KUALA

FACULTY OF AGRICULTURE
DEPARTMENT OF SOIL SCIENCE

UNDERGRADUATE PROGRAM

MODULE HANDBOOK

Module designation	Watershed Management (SSOL3047)
Semester(s) in which the module is taught	5 th Semester
Person responsible for the module	Prof. Dr. Ir. Hairul Basri, M.Sc
Language	Indonesian, English
Relation to curriculum	Compulsory module for Soil Science Department
Teaching methods	Lecture, small group discussion, interactive discussion
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 explain the definition and concept of watershed management, the characteristics and ecosystem of a watershed, watershed morphometry, surface runoff, flood recurrence period and its frequency distribution, as well as the impact of land use changes on flooding, evaluation of watershed degradation and its causes, and various aspects of watershed management. ✓ Students are able to understand watershed management, and become more critical and creative in understanding and solving problems related to watershed degradation. ✓ Students are able to understand integrated watershed management, and capable of conducting monitoring and evaluation of watershed degradation.
Content	The definition and concept of watershed management, watershed ecosystems, watershed biophysics and morphometry, surface flow, flood return periods and frequency distribution, as well as the influence of land use changes on flooding, evaluation of watershed damage, and causes of watershed damage, aspects of river watershed management, watershed monitoring and evaluation as well as research related to watershed management.
Exams and assessment formats	Quiz, Paper assignment, Midterm exam, Final exam
Study and examination requirements	<ul style="list-style-type: none"> ✓ Case Method: 50% ✓ Quiz: 10% ✓ Paper Assignment: 25% ✓ Midterm exam: 5% ✓ Final exam: 10%

Reading list	<ol style="list-style-type: none">1. Asdak, C. and Supian, S., 2018. Watershed management strategies for flood mitigation: A case study of Jakarta's flooding. <i>Weather and climate extremes</i>, 21, pp.117–122.2. Basri, H., Syakur, S., Azmeri, A. and Fatimah, E., 2022. Floods and their problems: Land uses and soil types perspectives. <i>IOP Conference Series: Earth and Environmental Science</i>, [online] 951(1), p.012111. https://doi.org/10.1088/1755-1315/951/1/012111.3. Pristianto, H. and Butudoka, M.A., 2023. Konsep Pengelolaan Daerah Aliran Sungai dalam Mengantisipasi Bencana dan Krisis Air di Ibu Kota Provinsi Papua Barat Daya. <i>Jurnal Ilmiah Ecosystem</i>, 23(2), pp.290–307.4. Renaldi, I. and Frinaldi, A., 2022. Pengelolaan Daerah Aliran Sungai Berbasis Good Environmental Governance. <i>Jurnal Bina Praja</i>, 14(2), pp.225–237.5. Suprayogi, S., Purnama, L.S. and Darmanto, D., 2024. <i>Pengelolaan Daerah Aliran Sungai</i>. UGM PRESS
--------------	--