

Module Handbook

Module Name	Environmental Quality Analysis			
Module Level	Higher Diploma			
Code, if applicable	VKT745			
The subtitle, if applicable	-			
Courses, if applicable	-			
Semester(s) in which the module is taught	Odd semester			
A person responsible for the module	Puji Kurniawati, M.Sc.			
Lecturer	Puji Kurniawati, M.Sc.			
Language	Bahasa Indonesia			
Relation to curriculum	Elective			
Type of teaching, contact hours	Student active learning and project based learning: (1) face to face: student active learning; (2) structure activities: project based learning; (3) independent study (4) exam: 6.47 hours x 16 weeks per semester			
Workload	Total Workload		91 hours; 2 CU	
		Face to face	Structure activities	Independent study
	Hours	24	28	28
Credit Points	2 CU/3.37 ECTS			
Requirements according to the examination regulations	75% minimum requirements of attendance			
Recommended prerequisites	-			
Module objectives/intended learning outcomes	<p>PLO 5: Able to contribute to solving problems in the scope of work.</p> <p>Subject LO:</p> <ol style="list-style-type: none"> 1. Students are able to apply principles of water, soil, and air sample analysis methods 2. Students are able to describe and analyze water, soil, and air samples both instrumental and non-instrumental according to their characteristics 3. Students are able to respond, solve, and overcome problems related to water, soil, and air pollution 			
Content	<ol style="list-style-type: none"> 1. Parameters and testing of water and wastewater quality parameters 2. Parameters and soil quality testing including macro, micro, and soil contamination nutrients 3. Air quality parameters and tests include analysis of ambient air, moving emission gases, and immovable emission gases (acid chimneys and volcanic gases) 			
Study and examination requirements and forms of examination	Subject LO	Examination requirements and forms of examination		Percent
	1	Quizzes, assignment, midterm exam, final exam		40
	2	Quizzes, assignment, midterm exam, final exam		30
	3	Quizzes, assignment, midterm exam, final exam		30
Media employed	Google classroom, youtube, zoom meeting, google form, google doc			

Reading list

1. Alaerts, G., Santika, S.S., 1984, Metode Penelitian Air, Usaha Nasional Surabaya
2. Balai Penelitian Tanah Badan Penelitian dan Pengembangan Pertanian Departemen Pertanian, 2005, Petunjuk Teknis Analisis Tanah, Tanaman, Air, dan Pupuk
3. Barcelo, D., Hennion, M.C., Trace Determination of Pesticides and their Degradation Products in Water, Elsevier Science
4. Connel, D.W., dan Miller, G.J., 1995, Kimia dan Ekotoksikologi Pencemaran, Penerjemah Yanti Koestoer, UI press, Jakarta
5. Furumai, H., Sato, S., Kamata, M., Yamamoto, K., 2010, Advanced Monitoring and Numerical Analysis of Coastal Water and Urban Air Environment, Springer Japan
6. Hites, R.A., 2007, Elements of Environmental Chemistry, John Wiley & Sons Inc., New Jersey
7. Keith, L.H., 1991, Environmental Sampling and Analysis: a Practical Guide, RCR Press, Boca Raton
8. Patnaik, P., 2010, Handbook of Environmental Analysis: Chemical Pollutants in Air, Water, Soil, and Solid Wastes, Second Edition [2 ed.], CRC Press, Boca Raton
9. Perry, B.F., Supplemental Guidance for the Determination of biochemical oxygen demand (BODs) and carbonaceous BOD (CBODs) in Water and Wastewater
10. Quevauviller, P.P. and Thompson, C., 2006, Analytical Methods for Drinking Water: Advances in Sampling and Analysis, Wiley
11. Reemtsma, T. and Jekel, M., 2006, Organic Pollutants in the Water Cycle, Wiley-VCH, Weinheim
12. Standar Nasional Indonesia Air dan Air Limbah Bagian 1 – 75
13. Standar Nasional Indonesia Kualitas Air Laut Bagian 1 – 7
14. Standar Nasional Indonesia Kualitas Udara Emisi Gas Buang - Sumber Bergerak Bagian 1 – 2
15. Standar Nasional Indonesia Kualitas Udara Emisi Gas Buang - Sumber Tidak Bergerak Bagian 1 – 20
16. Standar Nasional Indonesia Kualitas Udara Ambien Bagian 1 – 13
17. Standar Nasional Indonesia Pengujian B3 Bagian 1 - 8
18. Suharto, I., 2011, Limbah Kimia dalam Pencemaran Udara dan Air, Andi Offset, Yogyakarta
19. Weiner, E.R., Application of Environmental Chemistry: A Practical Guide for Environmental Professionals, Lewis Publisher Florida