5. Concepts of Pollution Control and Environmental Degradation

Module designation	Concepts of Pollution Control and Environmental Degradation
Code, if aplicable	C IL 2 3 825
Semester(s) in which the module is taught	2nd
Person responsible for the module	Prof. Dr. Ir. Purwanto, DEA
Language	Indonesian and English
Relation to curriculum	Elective
Type of teaching, contact hours	• Regular meeting with Lecturer 16 times (40 hours with total contact hour per teaching is 2.5 hours weekly for 16 weeks). This activity consists of Lecture: 80 minutes; Q&A: 20 minutes; Discussion: 30 minutes; Presentation: 20 minutes. • Independent work on reading materials and literature review (48 hours, 3 hours weekly for 16 weeks). • Preparing paper and final personal assignment (40 hours, 2.5 hours weekly for 16 weeks). • Personal work on reflecting the course's gained knowledge to the student's research topic (22 hours, 1.35 hour weekly for 16 weeks). Total contact hours in 1 semester = 150 hours
Student Workload for One ECTS	• Face-to-face Lecturers in class (6.67 hours) • Independent work (reading books, materials, papers, literature review, etc. : 8 hours) • Preparing paper and structured assignments (doing homework or assignments given by lecturers : 6.67 hours) • Personal work on reflecting the course's gained knowledge to the student's research topic (3.67 hours) • Total workload for one ECTS = 25 hours
Laboratory Work	*There is no required laboratory work for this course*
Credit points	*2 SKS which is equivalent to 6 ECTS*
Requirements according to the examination regulations	Minimum attendance of lectures 75%
Required and recommended prerequisites for joining the module	Existing competencies in ecology

Module objectives/intended learning outcomes	• Able to analyze environmental pollution and its sources. • Able to examine various implications of pollution on quality and environmental degradation. • Able to evaluate pollution control along with disaster mitigation and recovery.
Content	• Definition of environmental pollution and pollutant sources, control of water environment pollution, • control of air environmental pollution, • control of soil environmental pollution, • implications of pollution on environmental degradation and environmental degradation, • possibilities of environmental disasters due to pollution, • principles of pollution control from the perspective of physics-chemistry, biology, and health, • principles of pollution control from community participation, • principles of disaster mitigation and recovery, • case studies of pollution in the air environment, • case studies of pollution in the hospital environment, • case studies of pollution in the hotel environment, • study cases of pollution in industrial areas, • case studies of pollution in urban areas.
Exams and assessment formats	One oral Midterm assessment (15 minutes each), one final oral exam (20 minutes), take-home written assignments.
Study and examination requirements	
Reading list	Alley, K. D., & Mehta, T. (2022). Contradictions In Pollution Control. Climate Politics and the Power of Religion, 119. Cheremisinoff, N.P., 2002. Handbook of Air Pollution Prevention and Control. Elsevier. Eskeland, G. S., & Jimenez, E. (1991). Choosing Policy Instruments for Pollution Control: A Review. Policy Research Working Paper Series, (624). Rao, C.S., 2007. Environmental Pollution Control Engineering. New Age International. Van Der Ploeg, F., & De Zeeuw, A. J. (1992). International Aspects of Pollution Control. Environmental and Resource Economics, 2(2), 117-139. Vesilind, P.A., Peirce, J.J. and Weiner, R.F., 2013. Environmental Pollution and Control. Elsevier. Wardhana, W.A., 2004. Dampak Pencemaran Lingkungan (Edisi Revisi). Yogyakarta: Penerbit Andi.