MODUL HANDBOOK
ENVIRONMENTAL POLLUTION CONTROL

MASTER PROGRAM OF ENVIRONMENTAL SCIENCE
SCHOOL OF POSTGRADUATE STUDIES
DIPONEGORO UNIVERSITY

Modul Descriptions :

Module designation	Environmental Pollution Control
Semester(s) in which the module is taught	2nd Semester
Person responsible for the module	Prof. Dr. Tri Retnaningsih Soeprobowati, M.App.Sc. Dr. Ir. Bambang Yulianto, DEA. Ir. Pertiwi Andarani, S.T., M.T., M.Eng., Ph.D., IPP
Language	Indonesian and English
Relation to curriculum	• Compulsory for Environmental Engineering Concentration/Specialization • Compulsory for Environmental Management Concentration/Specialization
Teaching methods	Mix Method or Blended Learning by incorporating Lecture Based-Learning, Student Centred-Learning and Technological Learning • Lecture Based-Learning: teacher lead a lesson by using presentation, showing visual • Student Centred-Learning: teacher promote individual learning so that student can exploring individual idea • Technological Learning, teacher leads to use high technology in information such as by exploring, utilizing internet/searching engine and social media.
Workload (incl. contact hours, self-study hours)	• Lecture, 2 hours per week • Discussion and presentation (Q&A), 1 hours per week • Individual assignment, 3 hours per week • Total workload for semester = 100 hours
Credit points	2 credits / 4 ECTS
Required and recommended prerequisites for joining the module	No required prerequisite
Module objectives/intended learning outcomes	• Able to formulate environmental management theory especially for Environmental Pollution Control • Able to formulate and carry out scientific research to solve environmental problems especially for Environmental Pollution Control • Able to formulate environmental management policies, especially for Environmental Pollution Control

	• Able to formulate rules, methods through of environmental management especially for Environmental Pollution Control
Content	Environmental Pollution Control course examines the analysis of pollution problems, classification of pollution sources: water, soil, air, toxicology of heavy metals, food and medicine, pesticides; pollution materials, waste characteristics, pollution cycles, pollution impacts, prevention, control and prevention: supervision, determination/estimation of environmental quality (water, air, and land).
Examination forms	• Closed book or Open book. • Essay. • Individual and group assignments.
Study and examination requirements	Lecture attendance of at least 75%.
Reading list	1. Cheremisinoff, N. P. (2016). Pollution control handbook for oil and gas engineering. John Wiley & Sons. 2. Schnelle Jr, K. B., & Brown, C. A. (2016). Air pollution control technology handbook. CRC press. 3. Hocking, M. B. (2013). Handbook of chemical technology and pollution control. Elsevier. 4. Narisada, K., & Schreuder, D. (2013). Light pollution handbook (Vol. 322). Springer Science & Business Media. 5. Hung, Y. T., Wang, L. K., & Shammas, N. K. (Eds.). (2012). Handbook of environment and waste management: air and water pollution control (Vol. 1). World Scientific. 6. Alley, E. R. (2007). Water quality control handbook. McGraw-Hill Education. 7. Ghassemi, A. (Ed.). (2001). Handbook of pollution control and waste minimization. CRC Press. 8. Moestikahadi. (2001). Pencemaran Udara. ITB. Bandung 9. Liu, D.H.F., and B.G. Liptak. (2000). Air Pollution. CRC Press. Florida.