ACADEMIC AND THESIS GUIDELINE MES

MASTER PROGRAM OF ENVIRONMENTAL SCIENCE
SCHOOL OF POSTGRADUATE STUDIES
DIPONEGORO UNIVERSITY

STUDENT HANDBOOK

GUIDELINES

MASTER PROGRAM OF ENVIRONMENTAL SCIENCE
DIPONEGORO UNIVERSITY
2021

TABLE OF CONTENTS

Foreword

Environmental management always faces formidable challenges. In the New Order era, the environment was treated more as an asset in supporting economic growth. In its later development, the environment is even seen as a commodity that is monopolistic in nature as a result of corruption, collusion, and nepotism (KKN). It is not surprising that environmental damage and pollution continues to increase in both intensity and diversity. In the era of autonomy, the tendency to treat the environment as a commodity to increase regional income is very dominant. If this trend is not anticipated early on, the environmental damage will get worse. Environmental damage will not only threaten the existence of humans living in the present but also threaten the interests and needs of future generations.

Awareness of the need to preserve environmental functions on a global scale has actually started since the early 1970s. Indonesia responded quickly to global awareness, as indicated by the enactment of the Law on Environmental Management in 1982, actively participating in various world forums and being one of the signings of the Rio Summit which resulted in Agenda 21. However, the implementation of the political will has not yet shown results. the good one. Development planners and actors are generally still oriented towards financial gains with short-term dimensions.

Based on the above conditions, an understanding of the environment is very necessary for decision makers, planners, managers, businesses, educators and other related development actors. Through education, it is hoped that people who are skilled and skilled in managing natural resources sustainably and have comprehensive insight into development management are expected. Through education, students always carry out academic exercises that combine the theoretical world with the real world, which are dedicated to the benefit of mankind. Diponegoro University's Master of Environmental Science Program was born ahead of regional autonomy where the environment becomes the foundation for increasing regional income. For this reason, regionally educated personnel who are able to have managerial planning and engineering skills are needed. Environmental managers in the future are not only required to be skilled in applying knowledge but also to be responsive to the needs and aspirations of the community. The origin of students in the first year from various backgrounds and scientific backgrounds will become a unique but nuanced mosaic which is a replica of a portrait of an environment. Hopefully the presence of this study program can help realize environmentally sound development

Semarang, March 2021
Program Leader

Dr Eng Maryono, ST, MT

OVERVIEW
DIPONEGORO UNIVERSITY

1. A BRIEF HISTORY

The establishment of Diponegoro University was initiated in mid 1956 marked by the establishment of the Semarang University Foundation. The figures who initiated the establishment of the University of Semarang are Mr. Imam Bardjo, Mr. Soedarto, Mr. And Solomon, and Mr. Soesanto Kartoatmojo.

The University of Semarang was officially opened on January 9, 1957. Given the young age with very limited educational infrastructure, it was only at that time that the State Administration Academy was opened with the first Dean, Mr. GoenawanGoetomo, Academy of Commerce with the first Dean Drs. Tjioe Sien Kiong, the Technical Academy which later became a Faculty with the first Dean Prof. Ir. Soemarman.

At the third anniversary ceremony of the University of Semarang on January 9, 1960, the President of the Republic of Indonesia, Ir. Soekarno changed the nameof the University of Semarang to UNIVERSITAS DIPONEGORO, as an award for achievements in the development of higher education in Central Java. The (private) University of Diponegoro was declared a State University, starting on October 15, 1960. This date was later designated as the anniversary of Diponegoro University.

At that time the faculties that had been established were the Faculty of Law and Public Knowledge, the Faculty of Economics, the Faculty of Engineering, and the Faculty of Teacher Training & Education.

2. UNIVERSITY DEVELOPMENT

Since it was inaugurated as a state university on October 15, 1960, Diponegoro University has continued to develop itself by equipping faculties that are desperately needed as graduates of human resources with undergraduate quality.

In the period 1961-1970, Diponegoro University has succeeded in establishing four faculties, namely the Faculty of Medicine (1961), the Faculty of Animal Husbandry (1964), the Faculty of Letters (1965), the Faculty of Social and Political Sciences (1965), as well as two institutions namely the Research and Development Institute. Community Service Institute (1970). While continuing to strengthen the established faculties, Diponegoro University has also pioneered the establishment of variouseducational institutions that are increasingly complete. This is indicated by the establishment of various Specialist programs (Specialist Doctors, Notary Specialists), Non-Degree Faculty of Technology, Diploma III programs (Economics and Polytechnics), and Diploma IV programs (Medical Physics and Medical Installation and Nursing).

A proud achievement is the establishment of the Postgraduate Program (1994) which was followed by various undergraduate and postgraduate programs at Diponegoro University.

This success is a description of the development in quantity, while to determine the quality of education, the results of the assessment carried out by the National Accreditation Board for Higher Education (BAN-PT) can also be used as a description of its development. Diponegoro University was ranked 2nd in the assessment carried out by BAN-PT, with details of A : 54.84%, B : 35.48 %, C:3.22%. This shows that the development of Diponegoro University is not only in the physical aspect but also in the quality aspect. No less than the April 3, 1999 edition of the Journal of Asia Week has conducted an assessment of various universities,Diponegoro University was ranked as the 3rd best among 4 universities in Indonesia which was categorized as "The Best Universities in Asia 1999" after UGM and UI.

If this assessment is associated with the assessment from BAN-PT, it can be concluded that they are mutually reinforcing.

UNDIP's achievements cannot be separated from its participation in various government programs, in this case the Ministry of Education and Culture, including: Member of SKALU and SIPENMARU (1990), Member of the Six Universities Development and Rehabilitation Program (1985) which resulted in a new campus on aland area of ±212 ha., and members of the Marine Science Education Project (1987) which resulted in the Marine Science campus in Teluk Awur Jepara, as well as the roleof the Semarang City Government in providing Tembalang land as a campus, greatly assisting the development of UNDIP.

The current faculties at UNDIP are:

1. Faculty of Economics and Business
2. faculty of Law
3. Faculty of Cultural Sciences
4. Faculty of Social Science and Political Science
5. medical School
6. Faculty of Public Health
7. Faculty of Fisheries and Marine Science
8. Faculty of Animal Husbandry and Agriculture
9. Faculty of Science and Mathematics
10. Faculty of Engineering
11. faculty of Psychology
12. Graduate School
13. Vocational School

3. AT A LOOK UNDIP POSTGRADUATE PROGRAM

The Diponegoro University Postgraduate Program is organized based on the Decree of the Minister of Education and Culture No. 67486/A2.1.2/C/1994 dated November 7, 1994.

Long before the issuance of the Diponegoro University Postgraduate Program Implementation Permit mentioned above, in 1974 Diponegoro University had held Doctoral education in the fields of Law and Medicine. In its implementation until 1990 this program has produced more than 20 doctors. In 1982 the University in collaboration with the University of Indonesia held a master's program in the field of Law. This program in 1983 then stood alone at Diponegoro University as a Masters Program in Law. Based on various considerations, including: the development of the number of students, the development of facilities at the university and the increasing needs of the community in the number of quality human resources, then in 1994 Diponegoro University formed a postgraduate program which was directly responsible to the Chancellor. The postgraduate program is given the task of coordinating and managing postgraduate educational activities at the university and is responsible for the development of academic quality

As one of the educational institutions under Diponegoro University, to answer various challenges and market needs, the Postgraduate Program is growing rapidly, until the end of 2012 it has grown to 41 Study Programs which include 32 Masters Study Programs and 9 Doctoral Study Programs.

In its journey the Diponegoro University Postgraduate Program experienced a very basic dynamic of change, namely the issuance of the Decree of the Rector of the Diponegoro University Rector of Diponegoro University No. 609/SK/2011 dated November 11, 2011 concerning Administration and Academic Management of Postgraduate Study Programs that are monodisciplinary, according to the provisions of the second dictum stating "Moving the academic management and part of the administration of monodisciplinary study programs which were originally under the Postgraduate School, to be under the management of the Faculty . Since January 1, 2013 the Graduate School has only managed 5 study programs which include 1 Doctoral Study Program and 4 Masters Programs, namely:

Master's Program

1. Master (S2) Epidemiology (Decree of Director General of Higher Education No. 81/DIKTI/Kep/2001)
2. ***Master (S2) Environmental Science*** (Decree of Director General of Higher Education No. 130/Dikti/Kep/2000)
3. Master (S2) Information Systems (Decree of Director General of Higher Education (Decree of Director General of Higher Education 1508/D/T/2007)
4. Master (S2) Energy (SK Kemendikbud No : 157 / E / 2014)

Doctoral Program

1. Doctoral Program (S3) Environmental Science Ilmu, was established in 2008 (Decree of Director General of Higher Education No 2782/D/T/2008 dated 20 August 2008)
2. Doctoral Program (S3) Information Systems, established in 2020

ENVIRONMENTAL SCIENCE STUDY PROGRAM

1. BACKGROUND

The environment is one of the global issues in addition to two other issues, namely democracy and human rights. Global issues mean issues faced by countries in the world, both developed and developing countries. This is because environmental problems stem from the same main source, namely development activities. Development basically utilizes natural resources as an effort to improve human welfare. History shows that the use of natural resources that does not pay attention tothe carrying capacity of the environment causes damage that threatens human existence itself. Various environmental damage such as depletion of the ozone layer, global heat, acid rain, climate change, declining biodiversity, soil degradation, land erosion, air pollution, water, flooding,

The importance of caring for the environment grew with the publication of a book entitled "Limits to Growth" from the Club of Rome (1972). The development paradigm that incorporates environmental elements is referred to as sustainable development, namely development that is intended to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. This idea was sparked at the United Nations Conference in Stockholm which was then further strengthened at the Earth Summit in Rio de Janeiro in 1992 with a program of action contained in Agenda 21.

There are two main key concepts from the definition of sustainable development. First, the concept of very essential needs to be prioritized for the poor. Second, the concept of limitations or "limitations" of the environment's ability to meet the needs of present and future generations. For this reason, arrangements are needed so that the environment is still able to support development activities in order to meet human needs.

In Indonesia, formal awareness of the need for environmental management began with the enactment of Law no. 4 of 1982 concerning Principles of Environmental Management which has been revised by Law no. 23 of 1997 concerning Environmental Management. Long before the enactment of the Law, the idea of the need for the environment to be part of the first decision-making regarding development was contained in the 1973 GBHN, Chapter III point 10 which states that: "In the implementation of development, Indonesia's natural resources must be used rationally. . Exploration of these natural resources must be endeavored so as not to damage the human environment, carried out with a comprehensive policy, and taking into account the needs of future generations.

Entering the 21st century which is characterized by globalization, theenvironment is increasingly occupying an important position in development policies. Likewise, in a situation of economic crisis and in the era of regional autonomy, the environment which is the main focus of development drivers must receive more careful attention.

Starting from the above thinking, the educational process that instills the importance of environmental management knowledge and skills is needed to help realize sustainable development with an environmental perspective.

For this reason, the Center for Environmental Research (PPLH) of the Research Institute, supported by the Faculty of Engineering in collaboration with various units within the University of Diponegoro, which has carried out activities in the fields of research, training and community service in the environmental field since 1984 initiated the establishment of the Master of Environmental Science program. with a concentration on Environmental Planning and Environmental Engineering.

This study program was born with the Decree of the Director General of Higher Education No. 130/Dikti/Kep/2000. Since 2003 the concentration has increased with Environmental Management and since 2016 the Master of Environmental Science has opened a concentration on disaster management.

2. SPECIFICATION

Specifications of the Environmental Science Masters Study Program at Diponegoro University Semarang are as follows:

1. College: Diponegoro University
2. Implementing the Learning Process:
   Faculty: Graduate School
   Study Program: Master of Environmental Science (S2)
3. Decree of Establishment: Decree of the Director General of Higher Education
   No. 130/DIkti/Kep/2000
   May 1, 2000
4. Accreditation:
   a. BAN PT 2005 with Accreditation Score A Nilai
      SK No: 007/BAN-PT/Ak-IV/S2/VI/2005
   b. BAN PT 2010 with Accreditation Score A Nilai
      SK No: 007/BAN-PT/Ak-IV/S2/VI/2005
   c. BAN PT 2015 with A Accreditation Score
      No SK: 973/SK/BAN-PT/Akred/M/IX/2015
   d. BAN PT 2020 with A Accreditation Score
      No. SK: 5245/SK/BAN-PT/Ak-PPJ/M/IX/2020
5. Graduate Degree:
   - Master in Environment **(M.Ling)** (Since 2018)
   - Master of Science **(MSi)** (until 2017)

3. VISION AND MISSION

Vision : to be a master program that excels and is at the forefront of integrating environmental, economic, and social interests.

Mission: To realize this vision, the missions carried out are:

a. organize postgraduate higher education at the master's level in the field of environmental planning and engineering;
b. organize and pioneer research activities in the development of environmental management science and technology;
c. facilitating community service activities in the field of environmental management;
d. become a feeder center in thinking and solving environmental problems.

4. OBJECTIVE AND LEARNING OUTCOMES

UNDIP sets the goal of providing UNDIP education, namely to produce graduates who have a COMPLETE profile (Communicator, Professional, Leader, Educator, and Thinker), namely graduates who are able to contribute to the development of science, knowledge, technology, arts and culture at national and international levels. Translating these objectives, the purpose of organizing an educational program for Master of Environmental Sciences is to produce graduates who have the ability to:

- Able to demonstrate the knowledge of environmental science to the community
- Able to conduct research for the development of environmental science
- Able to formulate environmental management policies
- Able to become a professional in implementing knowledge and methods of controlling environmental damage, both in work and in business development

The Learning Outcome of Master Program of Environmental Science as follow:

1. Able to formulate environmental management theory
2. Able to formulate and carry out scientific research to solve environmental problems
3. Able to formulate environmental management policies
4. Able to formulate rules, methods and thoughts of environmental management to improve the quality of life, and save them in the form of theses, national and international journals or in the form of proceedings of reputable seminars

5. STUDY PROGRAM ORGANIZATION

The implementation of the study program uses the Semester Credit System as regulated in the Decree of the Minister of P and K No. 0124/U/1979 dated June 8, 1979. In this system there are several basic meanings that need to be understood:

a. The credit system is an education administration system, in which the study load of program participants, the workload of teaching staff, and the burden of program administration are stated in credits.
b. Semester is the smallest unit of time to express the length of an educational program that is equivalent to 16 lecture activities including mid-semester examinations and end-semester examinations.
c. Semester credit unit is a unit that states the amount of study load and theamount of recognition of participant success, both per semester and cumulatively.

d. Lecture semester credit units are the participant's activity load per week, namely 50 minutes of face-to-face (class instruction), 60 minutes of assignments, and 60 minutes of independent activities.
e. The practicum/field work semester credit unit is equivalent to 4 hours per week in the laboratory, or 4 hours per week in the field in one semester.
f. The unit of credit for the semester of research/thesis preparation is 2 credits equivalent to 6-8 hours of field work a day for a month (25 working days).

The implementation of the Environmental Science Masters education program at Diponegoro University refers to the Decree of the Chancellor of Diponegoro University No. 072/SK/J.07/2000 regarding the implementation of the Master Program in the UNDIP Postgraduate Program.

6. FIELD OF CONCENTRATION

The Study Program opens 4 concentrations, namely Environmental Planning, Environmental Engineering, and Environmental Management and Disaster Management. Each concentration will be implemented if the number of students is at least 7 (seven) students, if the number of students who choose the concentration of Environmental Planning or Environmental Engineering is less than 7 (seven) each, the study program will hold a concentration on environmental management which is a combination of two concentrations. .

7. COMPETENCE

Competencies of graduates of Master of Environmental Sciences are formulated as follows:

Graduate Profile	Main Competencies	Supporting Competencies	Other Competencies
Environmental Science Academic	Able to explain theoretical thinking in environmental science	Have skills in solving environmental problems both orally and in writing	Able to analyze environmental risks and understand the concept of environmental management
	Able to explain conceptual thinking about research methodology	Have the ability to parse theoretical abstractions in environmental science	Able to interact and cooperate with other parties
	Able to do environmental research	Able to act as a facilitator in environmental science learning	Able to act as a mediator in environmental conflicts
Environmental Science Researcher	Able to explain various	Able to carry out the stages in the	Able to analyze environmental risks and understand the

	environmental research methods and techniques	environmental research process	concept of environmental management
	Able to design environmental research	Able to apply environmental research methods and techniques	
	Able to do environmental research		
Environmental Science Professional	Able to design professional work in the environmental field	Have the ability to plan to carry out professional work in the environmental field	Able to interact and cooperate with other parties
Entrepreneur	Able to carry out professional work in the environmental field	Have skills in the field of entrepreneurship	Able to interact and cooperate with other parties

8. LEARNING TIME RANGE AND NUMBER OF CREDITS

The completion period for the Master of Environmental Science education program is 18 months to 24 months, which is divided into 4 (four) semesters. The study program provides opportunities for the development of collaborative programs allowing completed less than 18 Months or System Modules.

Each participant of the Environmental Science Masters Program is given the opportunity to complete his studies in no later than 8 (eight) semesters including thesis writing and a comprehensive thesis exam. The number of credits that must be taken is 41 credits.

9. ACADEMIC ADMINISTRATION IMPLEMENTATION

The implementation of the credit system requires the obedience of all elements involved (participants, teaching staff, and administrative staff) to the predetermined schedule of educational activities, including lectures, administering exams, submitting test scores to the Study Program Secretariat, as well as administration of accurate scores.

To facilitate its implementation, several forms have been provided as follows:

Study Plan Card (KRS) which lists all courses taken by a participant in one semester unit. The KRS is filled out by the participant concerned with the approval of the Academic Supervisor (PA) and the Head of the Study Program. KRS can be obtained at the Study Program Secretariat, after showing proof of registration and payment as well as solving other administrative problems. The completed KRS is returned to the Study Program Secretariat according to the specified schedule. The number of courses taken in a semester corresponds to the number of credits in each

package. For semester I = 12 credits, semester II = 10 credits, semester = 10 credits, semester IV = 8 credits. If the student takes other courses, it can be justifiedwith the approval of the academic supervisor and other administrative provisions,

The List of Course Participants (DPMK) includes the names of all participants who will take a course in one semester unit. DPMK is made on the basis of KRS which is filled out by participants and approved by the academic supervisor and the Head of the Study Program. Every lecturer who gives lectures in the current semester will receive a List of Course Participants (DPMK).

The List of Exam Participants (DPU) includes the names of all participants who will take the exam for a course in a semester. DPU is made on the basis of DPMK. Every lecturer who gives exams, both mid-semester and end-of-semester exams, will receive DPU from their respective courses.

The Study Result Card (KHS) lists the test scores of all the courses aparticipant takes in a semester, according to the KRS he/she fills in.

The KHS also includes the Semester Achievement Index (IPS) and the number of credits obtained by the participants concerned. KHS will be given to each participant before the next semester registration period.

10. EXAM AND RATING SYSTEM

Each participant is only allowed to take the exam for a course, if he has attended at least 75% of all course activities.

The test score (N) of a course is indicated by the letters A (special), B (Good), C (Enough), D (fail). A participant will get credits for a course, if the test scores for that course are A, B, and C. Participants who get a D score for one or more courses, are required to re-take the lecture for the relevant subject in the following semester, before allowed to take the exam.

In addition, the test scores are also stated with the letters K (blank) and TL (incomplete). The value for the course, which is based on at least 2 (two) grades from the evaluation results of the course, is given by the lecturer concerned at the end of the semester.

Values for the proposal seminar, are given by an assessment team consisting of both Advisors and Examiners.

The score for the comprehensive thesis exam is given to participants by the Examining Commission which consists of four examiners (Chairman of the Session, Secretary of the Session who is also an examiner, two supervisors, and at least one expert examiner).

Values in the form of the letter K (blank) are given to participants whowithdraw from courses that have been listed in their KRS. A participant can withdraw from a course that has been listed in his KRS no later than (one) month after the notification of the course is implemented. The resignation letter must be submitted to the Head of the Study Program, after being approved by the Academic Supervisor.

Values in the form of TL letters (incomplete) are given to participants who have not completed all the tasks determined by the course lecturer. This task must be completed by the participant concerned within the applicable time limit and the test score must have been submitted to the Study Program Secretariat before the registration period for the next semester ends, otherwise the TL score will be changed to a D score.

Number of Semester Credit Units (SKS) shows the number of courses in one semester that are planned and taken by a participant in a semester in accordance with the KRS he/she fills in.

The number of Grade Point Averages (GPA) shows the result of the increase in the number of credits for each course that has been taken by a participant since he was registered as a participant in accordance with the KRS he filled in (semester I to semester IV) and stated in the form of an Academic Transcript.

Quality (M) shows the number that results from multiplying the weight of the test score with the SKS. Weighted test scores with credits. The weights of the test scores are as follows:

Score	Quality	Score	Quality
A	4.0	C	2.0
B	3.0	D	1.0
		E	0

The Semester Quality Number (JMS) shows the result of the increase in the number of M for each course that has been planned and followed by a participant in a semester, in accordance with the KRS he has filled out.

Semester Achievement Index (IPS) is a number obtained from the quotient of the number of semester quality and the number of semester credit units (IPS=JMS/JSKS).

The Grade Point Average (GPA) is a number obtained from the quotient of the total cumulative quality and the number of cumulative semester credit units (GPA=JMK/JSKSK). To be allowed to advance to the Thesis Seminar andComprehensive Thesis Examination, each participant must have a minimum GPA of 3.00 (three point zero zero).

Study completion exam is a thesis exam which is conducted if a student has completed all required courses, has presented the results of his research which is outlined in the form of a thesis and has been approved by the supervisor for the thesis exam. Thesis is student research as a result of developing knowledge that can be in the form of solving the environmental problems.

The procedure for writing a thesis and a comprehensive thesis exam isregulated by special regulations in the form of the Environmental Science Master Program Thesis Writing Guidelines issued by the Study Program.

The graduation of participants in the comprehensive thesis exam can be stated with the following predicate gradations:

a) The highest award (Cumlaude) if you get a final GPA > 3.75 - 4.00
b) Very satisfying, if you get a final GPA of 3.51 - 3.75
c) Satisfactory if you get a GPA of 3.00 - 3.50

11. EVALUATION SYSTEM

Product evaluation (student learning success) which is intended to determine the quality of graduation obtained from the implementation of learning and teaching in the Master of Environmental Science program, which includes:

a. Evaluation of the learning progress of each participant is carried out at the end of every quarterly semester or those achieved from the first cawu or the first semester (beginning of the study period). To be able to continue their studies, a participant must be able to meet the criteria that have been set, and basicallymust be able to complete his studies in less than 2 years. Only with very strong reasons a participant can apply for an extension of study, which will be consideredstrictly by the program leader. However, the maximum period of time is not allowed to exceed 3 years.
b. A participant cannot continue his studies to obtain a Master's degree in the Environmental Science Study Program if he obtains less than 16 credits with a GPA of less than 2.50 (two point five) at the end of semester II. The person concerned is advised to stop his study or continue it by only obtaining a certificateindicating that he has attended several courses, with the lowest score being C.
c. A student is permitted to conduct research, if his research proposal has been approved by the thesis supervisory committee, previously this research proposal was presented in a thesis proposal seminar forum. A student is allowed to make research proposals and present in the forum if he/she has attended 24 credits including research methodology with a minimum GPA of 2.75. The results of the research are stated in a report called a thesis.

d. A participant is declared to have completed his studies if he has obtained 41 credits including seminars and theses (6 credits) with a minimum GPA of 3.00 (three point zero no) without a D grade.
e. If all the requirements and obligations of both financial administration and academic administration as program participants have been met, then the participant concerned is declared to have passed and is entitled to a certificate and a Master of Environmental Science (M.Ling) degree.

12. STANDARDS OF STUDY SUCCESS

Study participants who have completed 41 credits are declared successful in completing the education program, if they meet the following requirements:

1. Have a minimum period of 3 (three) semesters
2. Has presented scientific work related to the thesis at least 2 times at national and international seminars or wrote one scientific article published in scientific journals and 1 presentation at national and international seminars
3. Minimum GPA 3.00
4. Obtain a TOEFL certificate with a minimum score of 450
5. Pass the thesis exam

ORGANIZATION AND TEACHING STAFF

1. MASTER PROGRAM MANAGEMENT ENVIRONMENTAL SCIENCE

Program Leader: Dr. Eng Maryono, ST, MT
General & Academic Administration: Agus Hastomo, SP
Financial Administration: Doni Fajar, SE
Librarian: Ekana Listianawati, S.HumH
General Assistant: Adi Kurniawan

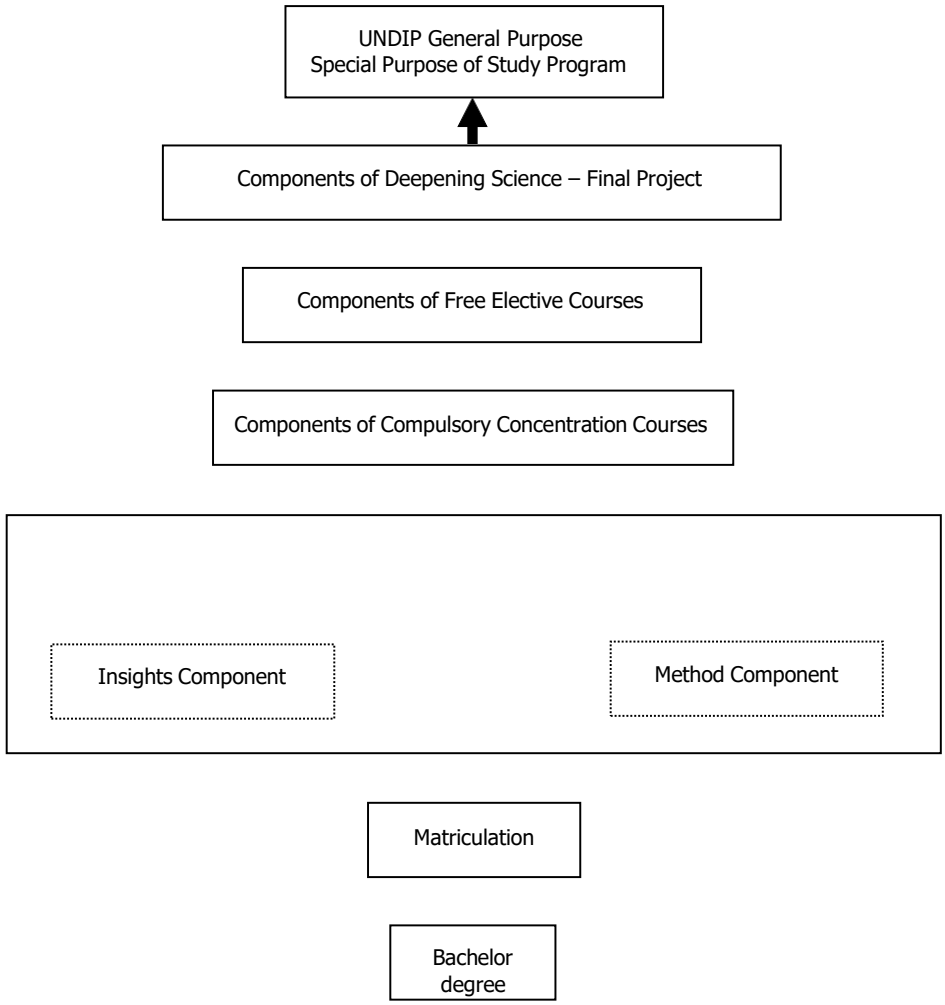
2. LIST OF SUPPORTING LECTURERS

1	Prof. Dr. Sudharto P Hadi, MES, Ph. D	23	Dr.sc.agr. Iwan Rudiarto, ST, M.Sc.
2	Prof.Dr. Ir. Purwanto, DEA	24	Dr.Ars. Ir. Rina Kurniati, MT
3	Prof. Dr. Hadiyanto, ST, MSc	25	Dr. Henna Rya Sunoko, MES
4	Prof. Dr. Ir. Sutrisno Anggoro, MS	26	Dr. Lita Tyesta Addy Listya Wardhani, SH, M. Hum.
5	Prof. Dr. Indah Susilowati, MS	27	Dr. Ir. Hermawan, DEA
6	Prof. Dr. Adji Samekto, SH, M. Hum	28	Dr. Rini Budihastuti, MSi
7	Prof. Dr. Azis Nur Bambang, MS	29	Ir. Setia Budi Sasongko, DEA, Ph.D
8	Prof. Dra Norma Afiati, MSc, PhD	30	Dr. Budiati Candles, SH, MM
9	Prof. Dr.rer Nat Ir Imam Buchori	31	Dr. Onny Setiani, Ph.D
10	Prof. Dr.rer Nat Ir Heru Susanto	32	Dr. Hartuti Purnaweni, MPA
11	Prof Dr dr Anies., M. Kes, PKK	33	Dr.Drs. Amirudin, M.Si.
12	Prof. Dr. Budiyono, MT	34	Dr. Drs. Dwi P Sasongko, Msi
13	Prof. Dr.Ir. Nany Yuliastuti, MSP	35	Dr. Fuad Muhammad, Ssi, MSi
14	Prof Dr Istadi, MT	36	Dr. Ir. Joesron Ali Syahbana, MSc
15	Prof. Dr. Sunarsih, MSi	37	Dr. Kismartini, MSi
16	Prof. Dr. Ing Suherman, ST, MT	38	Dr. Ing. Sudarno, MSc
17	Prof. Dr. Didi Dwi Anggoro, M.Eng	39	Dr. RB Sularto, SH, M. Hum.
18	Prof. Dr. Denny Nugroho Sugianto, ST, MSi	40	Dian Ratna Sawitri, SPsi., MSi, PhD
19	Prof. Dr. Ir. Sri Puryono, MP	41	Dr. Muhammad Helmi, SSi, MSi
20	Prof. Dr. Ir. Slamet Budi Prayitno, M.Sc.	42	Dr.rer Nat Thomas Triadi P., MEng
21	Dr. Eng Maryono, ST, MT	43	Mochamad Arief Budihardjo., ST, MEng. Env. Eng PhD
22	Dr. Jafron Wasiq Hidayat, MSc	44	Dr. Yanuar Luqman, S. Sos., M.Sc.

CURRICULUM STRUCTURE AND COURSES SYLLABIA

The curriculum structure of the environmental science master study program is summarized in Figure 1 as follows

Picture 1. Curriculum Implementation Structure



CURRICULUM AND SKS LOAD 2020

MASTER STUDY PROGRAM OF ENVIRONMENTAL SCIENCE

A. By Course

New Code	Courses (Mandatory)	PL	RL	ML	MB
	Semester I				
P-CIL-8-101	Philosophy of Science and Research Methodology	3	3	3	3
P-CIL-8-102	Environmental Economics and Natural Resources	3	3	3	3
P-CIL-8-103	Environmental Statistics	2	2	2	2
P-CIL-8-104	Ecology and Environmental Science	3	3	3	3
P-CIL-8-105	Computer Applications and Environmental Modeling	3	3	3	3
	TOTAL CREDITS OF SEMESTER I	14	14	14	14
New Code	**Courses (Mandatory)**	**PL**	**RL**	**ML**	**MB**
	Semester II				
P-CIL-8-201	Environmental Law and Policy	2	2	2	2
P-CIL-8-202	Environmental Impact Analysis	3	3	3	
P-CIL-8-203	Environmental and Disaster Risk				3
P-CIL-8-204	Environmental Planning Theories	3			
P-CIL-8-205	Natural Resources and Environment Conservation		3	3	
P-CIL-8-206	Disaster mitigation				3
P-CIL-8-207	Spatial Planning and Environment	2			
P-CIL-8-208	Environmental System Analysis		2		
P-CIL-8-209	Environmental Pollution Control			2	
P-CIL-8-210	Disaster Management Strategy				2
	Elective courses (*)	4	4	4	4
	NUMBER OF SEMESTER II CREDITS	14	14	14	14
New Code	**Courses (Mandatory)**	**PL**	**RL**	**ML**	**MB**
	Semester III				
P-CIL-8-301	Capita Selecta	2	2	2	2
P-CIL-8-302	Job training	1	1	1	1
P-CIL-8-303	Thesis proposal	2	2	2	2
P-CIL-8-304	Seminar and Thesis Publication	2	2	2	2
	NUMBER OF SEMESTER III CREDITS	7	7	7	7
New Code	**Courses (Mandatory)**	**PL**	**RL**	**ML**	**MB**
	Semester IV				
P-CIL-8-401	Thesis	6	6	6	6
	TOTAL SEMESTER IV CREDITS	6	6	6	6
New Code	**Elective courses (*)**	**MK CHOICE OF CREDITS**			
P-CIL-8-211	Green Infrastructure Planning	2			
P-CIL-8-212	Solid Waste and Hazardous Waste Management	2			

P-CIL-8-213	Disaster Management Cooperation	2
P-CIL-8-214	GIS Environment	2
P-CIL-8-215	Hydroclimatology	2
P-CIL-8-216	Environmental Anthropology and Communication	2
P-CIL-8-217	Resilience Development	2
P-CIL-8-218	Population, Environment and Natural Resources	2
P-CIL-8-219	Energy and Environment Development	2
P-CIL-8-220	Coastal and Marine Area Management	2
P-CIL-8-221	Transportation and Environment	2
P-CIL-8-222	Disaster Management Planning	2
P-CIL-8-223	Eco Efficiency and Sustainable Development	2
P-CIL-8-224	Decision Making Theory	2
P-CIL-8-225	Environmental Hazard and Risk Analysis Analisis	2
P-CIL-8-226	Clean Water Management	2
P-CIL-8-227	Waste Management Infrastructure Management	2
P-CIL-8-228	Clean Technology	2
P-CIL-8-305	Wastewater Management	2
P-CIL-8-306	Hospital Waste Management	2
P-CIL-8-307	Green Infrastructure Resilience	2
P-CIL-8-308	Noise and Vibration Control	2
P-CIL-8-309	Sanitation and Environmental Health	2
P-CIL-8-310	Environmental Toxicology and Epidemiology	2
P-CIL-8-311	Community Development Planning	2
P-CIL-8-312	Environmental Mediation and Negotiations	2
P-CIL-8-313	Environmental Psychology	2
P-CIL-8-314	Disaster Management	2
P-CIL-8-315	International Standards for Disaster Management	2
P-CIL-8-316	Community Based Disaster Risk Reduction	2
P-CIL-8-317	Disaster Risk Analysis	2
P-CIL-8-318	Evacuation Management	2
P-CIL-8-319	Early Warning System	2
P-CIL-8-320	Mass Transfer and Transformation	2
P-CIL-8-321	Regional Planning	2
P-CIL-8-322	Environmental Chemistry and Biology	2
P-CIL-8-323	Food Security and Environment	2
P-CIL-8-324	Disaster Waste Management	2
P-CIL-8-325	Environmental Diplomacy	2

Information:
PL= Environmental Planning
RL= Environmental Engineering
ML= Environmental Management
MB= Disaster Management

B. Program by Research

New Code	Courses (Mandatory) Semester I	R
P-CIL-8-101	Philosophy of Science and Research Methodology	3
P-CIL-8-131	Research Proposal I	3
P-CIL-8-132	Research Proposal II	3
P-CIL-8-133	Research I	5
TOTAL CREDITS OF SEMESTER I		14
New Code	**Courses (Mandatory)** **Semester II**	**PL**
P-CIL-8-234	Research II	6
P-CIL-8-235	Research Publications	7
NUMBER OF SEMESTER II CREDITS		13
New Code	**Courses (Mandatory)** **Semester III**	**PL**
P-CIL-8-336	Research Evaluation I	3
P-CIL-8-337	Research Evaluation II	3
P-CIL-8-338	Research Seminar	3
NUMBER OF SEMESTER III CREDITS		9
New Code	**Courses (Mandatory)** **Semester IV**	**PL**
P-CIL-8-401	Thesis	6
TOTAL SEMESTER IV CREDITS		6

BRIEF DESCRIPTION OF COURSE CONTENT IN ENVIRONMENTAL SCIENCE STUDY PROGRAM

MATRICULATION

The Master of Environmental Science Program is a multidisciplinary program that accepts students from various fields of science (multientry). To familiarize withthe field of environmental science and the learning environment in the postgraduate program requires an initial introduction through lectures of several introductory courses and field introductions. By participating in this program, students are expected to gain taste and sense about the substance of environmental science and with a teaching and learning atmosphere.

OBJECTIVE

Matriculation activities aim to:

a. Provides an introduction to the basics of environmental science.
b. Introducing environmental issues as material for environmental science studies.
c. Introduce students to the object of environmental science research.
d. Introduce students to the teaching and learning process in postgraduate programs.

MATRICULATION DESCRIPTION:

Matriculation consists of lecture activities in class, field observation activities.

a. LEARNING IN CLASS

Class lectures with face-to-face meetings up to 8 times. Each face-to-face is equivalent to 2 credits. The subjects presented in the matriculation are Environmental Social Aspects, Environmental Issues in Development, Basic Understanding of the Environment, and Basic Mathematics.

b. FIELD OBSERVATION ACTIVITIES

In the form of physical field observations (physical observations) and free interviews at locations that are hot issues related to the environment or at locations that have the potential to cause various impacts on the biophysical and social environment and or locations that can be examples of good environmental management.

SCOPE OF COURSES:

1. Social Dimensions of Environment and Natural Resources:

The position of the social aspect in sustainable development, the position of the social aspect in the AMDAL, social and environmental issues such as the case of Inti Indo Rayon, the Wood Processing factory in Kendal, PT. Palur Raya, exploitation of coral reefs in the northern coast, phenomena of demonstration movements, demonstrations in the reform era.

2. Basic Understanding of Environmental Planning and Management

The entire process of making previous decisions about things to be done in the future. Planning is deciding in advance what is to be done and how to do it. Planning is selecting and relating the fact, making and using assumptions to regard the future in the visualization and formulation of proposed activity believed necessary to achieve desired result.

MANAGEMENT

The ability to obtain a result in the context of achieving goals through the activities of others.

Private Sector Domain

- Individual choice in the market
- Demand and price closure for the private for private action
- The equity of the market
- The search for market satisfaction
- Customer Sovereignity
- Exix as stimulus

Public Sector Domain

- Collective choice in the polity
- Need for resources
- Openness for public action
- The equity of need
- The search for the justice
- Collective action as the instrument of the polity voice as the conditional

3. Fundamentals of Quantitative Methods

System of linear equations, non-linear system of equations, limit, differential, integral, transcendental functions and their properties, approximate value, f. This basic mathematics material is emphasized to provide the basics of mathematical equations and mathematical models used in environmental science.

4. Environmental and Natural Resources Issues in Development

The position of environmental aspects in sustainable development, environmental issues as part of global issues, environmental implications in the era of regional autonomy, environmental implications for setting effluent quality standards, issues of environmental damage due to exploitation of natural resources and land, environmental pollution and spatial planning.

SCOPE OF FIELD ACTIVITIES

Includes physical field observations and free interviews at locations that are hot issues related to the environment or locations that can be examples of good environmental management.

Locations that are the object of observation are around Semarang, if possible, make observations on various objects outside the city of Semarang. For the city of Semarang, the object of observation is the case of contamination of the Babon River in the Genuk Industrial Zone, the Tawang Retention Pool, the case of the deflection of the Tawang Mas River.

In addition to field observations, visits were also made to agencies related to environmental management, for example in the City of Semarang, namely the City Bappeda, especially those related to "Environmental aspects in the development of the City of Semarang" and the City Bapedalda to find out "Policies for controlling environmental impacts in the City of Semarang".

The results of field physical observations were cross-checked with the two agencies that handle environmental problems both in terms of planning and controlling environmental impacts.

After the field visit, the students worked in groups to identify the nature of the problems, take an inventory of the causal factors, and propose several alternative solutions. The results of the group discussions are presented, discussed in plenary, and then written down in the form of a report.

SYLLABI

This syllabus contains a brief description of the lecture content, as well as several lists of important bibliography. A complete description and list of references is provided by the teacher concerned.

CIL-2-2-600.PHILOSOPHY OF SCIENCE AND RESEARCH METHODOLOGY

Understanding of philosophy, philosophy of science, the relationship of science with other sciences, aspects of philosophy in science, quantitative research approaches, qualitative research approaches, action research approaches or Action Research, comparative approaches to three types of research.

Research objectives and basics, observations and generalizations, sampling, data for decision making, correlation methods, simple and complex research designs, writing environmental research reports. Factorial experimental design and analysis. The decision-making method uses various optimization models: linear programming, dynamic programming, queuing model, transportation model, non-linear program, separable and integer programming. Statistical principles in environmental management, interaction between variables, determining the level of importance of various variables, formulating functional and mathematical models.

Bibliography:

1. Sumantri, Jujun Suria. 2001. Philosophy of Science: An Introduction.
2. Hadi, Sudharto P. Research Methodology: Quantitative, Qualitative and Action Studies.
3. Sumarno. Research methodology.
4. Singarimbun, Masri and Sofian Effendi. 1982. Principles of Research Methodology Chapter I, II, III, IV.
5. Koentjaraningrat. 1977. Community Research Methods Chapter I, IV, V, VI, X.
6. Hadi, Sudharto P. 2005. Social Research Methodology: Quantitative, Qualitative and Action Studies.
7. Moleong, Lexy. 1996. Qualitative Research Methods. Chapter I to VII.
8. Schlegel, Strut. 1982. Principles of Grounded Research Methodology.
9. Marshal, Catherine and Gretshan B. Rossman. 1989. Designing Qualitative Research.
10. Kumar, Krishna (ed). 1993. Rapid Appraisal Methods.
11. Yin, Robert K. Case Study Research: Design and Methods.
12. A. Creswell, John. W. 1994. Research Design: Qualitative and Quantitative Approach.
13. Brannen, Julia. Combining Qualitative and Quantitative Research Methods.

CIL-2-2-601 ENVIRONMENTAL ECONOMY AND NATURAL RESOURCES

Basic concepts of environmental economics, basic theories of environmental economics: efficiency and competition, externalities, social costs, market structure, issues of equity in income distribution, alternatives to externalities, public good environmental quality, government as environmental quality provider, income distribution aspects in environmental policy , various cases and problems, population, economic growth for environmental costs, incentives and environmental quality.

Bibliography:

1. Adelman, I. & CT Morris. 1973. Economic Growth and Social Equity in Developing Countries. Stanford UP: California.
2. Anderson, FR et al. 1979. Environmental Improvement Through Economic Incentives, The Juhn Hopkins. U.P: Baltimore.
3. Salim, Emily. 1982. Development with Equity Indonesia's Future Challenge. International Forum on Development Planning and Implementation. The Korea Development Institute: Seoul, Korea. October 1982: 3 pp.
4. Seneca, JJ & MK Taussing. 1979, Environmental Economics, Prentice Hall, Englewood, NY: 379

CIL-2-2-602 ENVIRONMENTAL STATISTICS (MKK)

Matricial correlation, principal component analysis, normal distribution, log-normal, log-person III, Weibull, Gumber. Linear regression models and equations, intra-class correlation, deep linear regression, matrix notation, multiple/partial regression and correlation, time series analysis: secular trend, seasonal trend, cyclical fluctuation, irregular movement, seasonal variation index, analysis of variation: classification one direction, linear classification of many directions, estimating efficiency, non-parmetric statistic sign test, rank correlation coefficient, series test, Wilcoxon test, normality test of stochastic statistical model.

Bibliography:

1. Ang, AHS Concepts of Probability in Engineering Planning and Design, translated by Binsar Hariandja. Erlangga Publisher.
2. Box, GEP 1978. Statistics for Experiments. John Wiley and Sons.
3. Spiegel, MR, Susila, IN 1992. SI version of statistics (metric), Edition 4. Erlangga Publisher: Jakarta.
4. Siegel, S. 1956. Nonparametric Statistics for the Behavior Sciences. McGraw Hill Kogakusha, Ltd: Tokyo.
5. Taha, HA 1984. Operations Research. Tata McGraw Hill: New Delhi.

CIL-2-2-603ECOLOGY AND ENVIRONMENTAL POLLUTION

General principles, systems that maintain order on earth, ecosystem concept: their function and management, response to disturbances and homeostasis management, humans and the environment, development ecology, population ecology, sustainable development paradigm, water resources & supply, water pollution, waste management solid waste, introduction of toxic and hazardous waste, knowledge of atmosphere & air pollution, and air pollution.

Introduction, understanding of ecosystems, the relationship between humans and ecosystems, the causes and forms of ecosystem and environmental changes, the concept of natural resources,linkage of natural resources with environmental science, environmental preservation, the role of the community in environmental management, ecological studies of streams Ecological changes in waters.

Bibliography:

1. Chiras, D. 1988. Environmental Science.
2. Feachen, R., Mc. Garry, M. 1983. Water, Wastes and Health in Hot Climates. John Wiley and Sons.
3. Inhaber, H. 1976. Environmental Indices. John Wiley and Sons, New York.
4. Lovelock, JE 1979. GAIA, A New Look at Life on Earth. Oxford University Press.
5. Miller, Jr., GT 1985. Living in the Environment: An Introduction to Environmental Science. Wadsworth Publishing Company, California.
6. Odum, EP 1985. Fundamentals of Ecology, 3rd. ed. WB Sanders, Philadelphia.
7. Salim, Emily. 1981. Environment and Development.
8. Soemarwoto, Otto. 1991. Ecology, Environment and Development. bridge.
9. Watt, KEF 1973. Principles of Environmental Science. Mc. Graw Hill.
10. WCED. 1983. Our Common Future. Oxford University Press, Oxford.

CIL-2-2-604 COMPUTER APPLICATIONS AND ENVIRONMENTAL MODELING

Information retrieval, environmental information systems, classification of environmental information, theoretical data and its relationship to environmental information, data processing using computers. Spreadsheet application (Excel), visual basic (Programming), Access (Database), SPSS (Statistics), word processing (Word), Presentation (Power Point).

Bibliography:

1. Software books related to Excel, Word, Access, Visual Basic, Power Point.
2. Software book related to Applied Statistics.
3. Singgih, Santoso. 1999. SPSS Processing Statistical Data Professionally. Elex Media Komputindo.
4. Sarwono, Jonathan. Analysis of Research Data using SPSS. Andi Publisher.
5. The Complete Microsoft Word XP for Windows Guide. 2004. Andi Publisher.
6. Sianipar, Pandapotan Ir. 2003. Using Microsoft Office Powerpoint. Elexmedia Komputindo.
7. Maximizing Data Processing Automation Facilities and Functions with Microsoft Office Excel. Andi Publisher.
8. Visual basic 6.0 programming. Andi Publisher.

History of systems and models in environmental management. History of models, concepts and approaches, definitions and clarifications, various systems and models and their applications in environmental management, model construction, input-output models, system-to-model relationships, simulations and case studies.

Bibliography:

1. Douglas, H. Environmental System Optimization. John Wiley
2. Thomannn, RV & Mueller, JA 1987. Principles of Surface Water Quality Modeling and Control, Harper & Row Publishers: New York.
3. Odum EP Ecology of Systems. Translated by Supriyono et al, Publisher Erlangga:Jakarta

CIL-2-2-605 ENVIRONMENTAL LAW AND POLICY

National environmental laws and regulations and their history, environmental insight and archipelago insight, environmental insight and good governance, international environmental regulations/instruments and their history, global environmental policy, eg clean production, ecolabel, ISO 14000, philosophy, law, and the environment, environmental ethics, risk regulation, risk assessment, risk management and the environment, discrimination and fairness assessment, risk management and the environment, discrimination and environmental justice, various options for control tools for environmental quality improvement, regional autonomy, public interest and law environment, environmental law in the international community.

Bibliography:

1. Anomymous. 1970. Law and the environment. Walker Pub. Coy: New York.
2. Danusaputra, St. Munadjat. 1980. Environmental Law. Book II Bina Cipta: Bandung.
3. Hardjosoemantri, K. 1983. Environmental Law. Gadjah Mada University Press.

CIL-2-2-606 ENVIRONMENTAL SYSTEM ANALYSIS

This course is useful for solving problems using a systems approach. The system is intended as a collection of elements (system elements) that are interrelated with one another, where the relationship appears as a form of causal relationship.
Problems arise as a result of changes in a situation that takes place within a certain period of time (hereinafter referred to as dynamic changes), where conditions that change from time to time (hereinafter referred to as state variables) are the object of study for this course.

The preparation of the system as a model is an attempt to simplify the problem which is the relationship of the state variables as a result of the forcing function or the load for the system. This causal relationship model in a system is part of explaining natural phenomena (explanative forms) either on a macro or microscale, which is part of the first stage in this course.

The next stage of the causal relationship model is used to analyze, if the drive or load function is changed to find out the trend (tendency) of the state variable at the next time. This section is a predictive form.

The third stage is the control of the system, namely directing the state variable at a certain value. Where the value can change due to changes in the value of the load or disturbing variables that are still within the control range of the system.

Library Resources:

1. Bequette, BW,. 1998, Process Dynamics: Modeling, Analysis and Simulation, Prentice Hall International, Inc. NY
2. Daniek H. Kim, 1994, System Thinking Tools, Pegasus Communications, Cambrigde, Massachusetts.
3. George R. Richardson, Alexander L. Pugh, 1981, Introduction to System Dynamics Modeling with Dynamo, The MIT Press Cambridge, Massachusetts, London, England.
4. Jorgensen, SE, 1994, Fundementals of Ecological Modeling 2nd ed., Elsevier, NY
5. Keinath, TM Wanielista, M. 1975, Mathematical Modeling for water pollution control processes, Ann Arbor Science, Michigan.
6. Michel R. Goodman, 1980, Study Notes in System Dynamics, The MIT Press Cambridge, Massachusetts, London, England.
7. Muhammadi, Erman Aminullah, Budhi Soesilo, 2001, "Analysis of Dynamic Systems: Environmental, Social, Economic, Management", Publisher UMJ Press.
8. Party, GG, Chapman, D., 1989, Dynamic Modeling and Expert Systems in Wastewater Engineering, Lewis Pub. Inc., Michigan.
9. Robert N., Andersen D., Deal R., Garet M., Shaffer W., 1983, Introduction to Computer simulation: A system Dynamics modeling approach, Addison-Wesley Pub. Co. Sydney.

CIL-2-2-607 ENVIRONMENTAL PLANNING THEORIES (MKK)

The concept of sustainable development, sustainable development issues and strategies, environmental planning process: environmental analysis, determination and preparation of priority scales, preparation of alternative solutions to environmental problems, determination of environmental management plans, monitoring and evaluation.

Bibliography:

1. Blakely, Edward J. Planning Local Economic Development: Theory and Practice. Sage Publishing:London.
2. Budihardjo, Eko. 1999. Sustainable Cities. Alumni: Bandung.
3. Campbell, Scott and Frainstein, Susan. 1996. Reading's on Planning Theory. Black Well Publishing: Oxford.
4. Fredman, John. Planning in the Public Domain from Knowlegde to Action.PrincetownUniversity Press: Princetown.
5. Hadi, Sudharto P. 2001. Environmental Dimensions of Development Planning. Gajah Mada University Press: Yogyakarta.
6. Hadi, Sudharto P. 2002. Legal Dimensions of Sustainable Development. BP Undip: Semarang.
7. Roseland, M. 1994. Is Planning Theories Relevant to Sustainable Development? School of Community and Regional Planning. University of British Columbia:Vancouver.
8. Roseland, M. 1992. Sustainable Communities: Planning for the 21st Century.
9. Roseland, M. 1992. Toward Sustainable Communities, National Round Table on the Environment and Economy.
10. Wackernagel, Mathis. 1998. Ecological Footprints of Nations. How Much Nature Do They Use? How much Do They Have? Center for Sustainability Studies: Xalapa, Mexico.

CIL-2-2-608 CONSERVATION OF ENVIRONMENTAL RESOURCES (MKK)

Biodiversity, biodiversity conservation (ex-situ and in-situ), conservation areas, legal protection of biological diversity (IUCN, CITES, Satwa, and Puspaidentitas).

Bibliography

1. MacKinnon, JK, Mac Kinnon, G, Child & Jimthorsell. 1990. Management of protected areas in the tropics. Gadjah Mada Univc. Press

CIL-2-2-609 SPATIAL AND ENVIRONMENTAL PLANNING

The concept of spatial planning in the living environment. The need for agricultural layout, housing, industry, recreation, wildlife, etc. Spatial planning in regional development, region as a system, regulatory system, information theory, job opportunities, city expansion, etc.

Bibliography:

1. Budihardjo, Eko. 1999. Sustainable Cities. Alumni: Bandung.
2. Hough, M. 1991. City Form and the Natural Process.
3. Lewuk, Peter. 1995. Philosophical Criticism of Development.
4. Smith, DM. 1979. Where the grass is Greener.
5. Watt, K EF 1982. Understanding the environmental.
6. _____1997. Architecture and Cities in Indonesia. Alumni: Bandung.

CIL-2-2-610 ENVIRONMENTAL POLLUTION CONTROL

Anthropogenic sources of air pollution include stationary sources such as industry, coal and oil-gas power plants and mobile sources such as motorized vehicles. Each with different characteristics depending on the technology used and the fuel used. The emission of this source into the environmental air contains various gases and particulates, both of which are considered dangerous so that there is a quality standard or those that are considered not/less dangerous so that there is no limit. Several emission components that are considered dangerous include 2. SO2, CO, HC, NO2, PM, TSP, O3, Pb. each with a negative impact.

Bibliography:

1. Davis, ML and Cornwell, DA ;'***Introduction to Environmental Engineering***'; McGraw-Hill, Inc. New York. 1991
2. Corbitt, Robert A;' ***Standard Handbook of Environmental Engineering***';McGraw-Hill Publishing Co. New York. 1990
3. Parker,Albert (ed)11;'***Industrial Air pollution Handbook***' ; McGraw-Hill Book Co. London. 1978

CIL-2-2-614AMDAL

Environmental Impact Analysis (AMDAL) as an integrated part of development efforts and environmental management. AMDAL as part of feasibility (technical, economic and environmental feasibility) in various development plans. Various methods of AMDAL, impact estimation and evaluation. Preparation of environmental management and environmental monitoring. Various AMDAL case studies.

Bibliography:

1. Agarwalh C Bigwas, Agit K, Environmental for Developing Countries. Oxford Butterworth Huneman Ltd.
2. Dixon, FA., et al. 1992. Economic Analysis of the Environmental Impact of Development Project.
3. Hadi, Sudharto P. 1995. Social Aspects of AMDAL. Gadjahmada University Press: Yogyakarta.
4. Soemarwoto, Otto. Environmental Impact Analysis. GadjahmadaUniversity Press
5. Soeratmo, F Gunawan. Environmental Impact Analysis, Gadjahmada University Press, Yogyakarta, 1988.

CIL-2-2-700 POPULATION, ENVIRONMENT, AND SDA (MKK)

Definition of population and interpretation of population. Patterns and rates of fertility, patterns and mortality rates. Dynamics of migration, dispersal, and settlement. Ratio of age and sex. Overpopulation and spread. Employment and familyplanning. Understanding the social environment and cultural environment. Forms of social life. Social stratification, social institutions, social change.

Bibliography:

1. Kammeyer, KCW, G. Ritzer, NR Yetman. 1992. Sociology. Allyn & Bacon: Boston.
2. Boughey, A. 1986. Ecology of Population. Mc Millan Publ. Co.:London.
3. Hawley, QA.H. 1950. Human Ecology: A Theory of Community Structure. The Ronald Press Co.: NY
4. Iskandar, N. 1976. Indonesian Population Demographic Sketches, Indonesian Demographics 3 (5).
5. FE UI Demographic Institute. 1981, Basics of Demography. Pub. BPS, World Bank, etc.

CIL-2-2-702TECHNOLOGY AND ENERGY MANAGEMENT PLANNING

Energy and electricity sector policies:
Energy development goals, current conditions, energy reserves, energy crisis issues, challenges, KEN (National Energy Policy), vision, mission.

National Energy Management
Government programs in the context of national energy management, supporting programs, road maps of several energy sources: geothermal, nuclear, wind, solar.

Energy Planning
Classification of energy sources, basic principles of energy planning, development of energy planning, integrated energy planning.

The basic principle of converting primary energy into electrical energy.
Working principle characteristics: PLTU, PLTN, PLTA, PLTG and site selection.
Optimization of the operation of the electric power system.

Electrical Energy Distribution
Free and safe space SUTT and SUTET, the role of SUTET, magnetic and electric fields SUTET.

Bibliography:

Ministry of Energy and Mineral Resources, National Energy Policy.
Ministry of Energy and Mineral Resources, Blue Print of National Energy Management.
Yusgiantoro, Purnomo. 2000. Energy Economics: Theory and Practice. LP3ES.
Kadir, Abdul. 1995. Energy, Resources, Innovation, Electricity or Economic Potential.
Ministerial Decree of Mining and Energy, Free and Safe Space SUTET. UI Publisher.

CIL-2-2-705 COASTAL AND SEA AREAS PLANNING

Definition and limitations of: coastal and marine areas, coastal & marine area planning, scope of coastal and marine planning (WPL), potential and uniqueness and complexity of WPL problems, concept and urgency of WPL planning, integrated coastal and marine management, management policies and directions Tropical/Indonesian WPL. WPL management program planning cycle, WPL public access space management planning, problems & principles of coastal and marine access and public space management plans, bioregion and sediment cell approaches in spatial planning & coastal & marine development, WPL zone/zoning planning, WPL conservation area management planning, WPL vital habitat management planning (Coral reefs, Mangroves, Seagrass beds, Estuaries, Sand-dune),

CIL-2-2-717 COMMUNITY DEVELOPMENT PLANNING (MKB)

This course provides an understanding of community development planning and community organizing skills in preparing plans. The course description includes the background and history of community development (CD), symptoms of a weakening sense of community, CD basis, CD dimensions, community development planning, urban CD challenges, CED (Community Economic Development) strategies, the relationship between CD and sustainable development and several examples of CDs in developed and developing countries.

Bibliography:

1. Blakely, Edward J. 1989. Planning Local Economic Development: Theory and Practice. Newbury Park, Cal: Sage Publication.
2. Boothroyd, Peter. 1991. Looking Up at the Region: Regional Issue from a Community Development Perspective. SCARP, UBC, Vancouver, Canada.
3. Boothroyd, Peter. And Craig Davis. 1991. The Meaning of Community Economic Development. SCARP, UBC, Vancouver, Canada.
4. Boothroyd, Peter. 1991. Developing Community Planning Skills; Application of Seven Step Model. UBC CHS, Vancouver, Canada.
5. Economic Council of Canada. 1990. From the Bottom Up: The Community Economic Development Approach.
6. Hadi, Sudharto P. 1991. Comparative Analysis of Community Development: Developed and Low-Consumption Countries. Directed Study. School of Community and Regional Planning, UBC. Vancouver, Canada
7. MacLeod, Greg. 1986. New Age Business: Community Corporations That Work. Ottawa: Canadian Council on Social Development.
8. Morehouse, Ward (ed). 1989. Building Sustainable Communities: Tools and Concepts for Self-Reliant Economic Change. New York: Bootstrap Press.
9. Purbo, Hasan et. Al. 1995. Working with People: Indonesian Experiences with Community Based Development. Bandung and Toronto: The University Consurtium on The Environment.
10. Ross, David P. and Peter J. usher. From the Roots Up : economic Development as if Community Matted. Toronto: The Canadian Council on Social Development Series. James Lorimer & Co., Pbl.

CIL-2-2-720 DISASTER MANAGEMENT MANAGEMENT

Understanding disasters, types of disasters, causes of disasters, understanding disaster management, disaster management cycles, environmental management and disaster reduction, landslides, earthquakes, floods, droughts, tsunamis.

Bibliography:

Carter WN 1992. Disaster Management(A Disaster Manager's Handbook). Asian Development Bank: Philipeners.

STUDENT ADMISSION

REGISTRATION TERMS

Those who can be accepted as Environmental Science Masters Program students are those who meet the following requirements:

1. Holder of a bachelor's degree in Exact and Social Sciences
2. Have sufficient academic ability and are considered capable of pursuing master's education
3. Received a recommendation from two S-1 Lecturers, as much as possible the S-1 Academic Supervisor for Prospective Students. If it is not possible a recommendation can be given by another authorized person (direct supervisor at the agency concerned).
4. Submit a wish projection which includes:
   - ☞ Reasons for attending S-2 education and the chosen program
   - ☞ Desired expectations of S-2 education
   - ☞ Plans to be carried out after completing S2 education pendidikan
5. In good health with proof of health certificate from a doctor
6. Freed from the main duties at the agency
7. Pay the registration fee

REGISTRATION PROCEDURE

Register On Line to www.pendaftaran.undip.ac.id, follow 3 steps: Register an account, then pay the bank, you can go to Teler, ATM, Internet Banking. Next fill in and upload the file. And hardcopy Academic files can be submitted before the TPA Test is carried out. Academic Files The registration form is attached with:

- Photocopy of diploma accompanied by a certified academic transcript
- Certificate of study funding sources
- Recommendations from two undergraduate lecturers as far as possible as academic supervisors for prospective undergraduate students. If this is not possible, the recommendation can be given by another authorized person (direct supervisor at the agency concerned).

1. Projection of candidate's wishes which contains:

- Reasons for joining the Master's Program and the chosen program
- Desired expectations from the master's program

- Plans to be carried out after completing the Master's Program

2. Curriculum vitae (Curriculum Vitae)
- Certificate of guarantee for study payments from the agency or a statement of ability to self-finance with a stamp duty of Rp. 10,000
- Proof of payment of the registration administration fee of Rp. 750.000,-
- Academic Potential Test Certificate (TPA) and TOEFL (if any)

SELECTION OF PROSPECTIVE STUDENTS

The selection consisted of two written tests and interviews, namely: TPA and English tests which were carried out together with all other program participants and Interview Tests conducted by Study Programs.

Selection criteria include:

1. Academic Ability
2. Completeness of the specified requirements
3. Compatibility with educational background
4. Available capacity
5. Applicant's personality or integrity
6. Written test or interview according to the chosen field

The selection of applicants is carried out in the month (which has been determined), the final decision on whether or not to be accepted is determined by the Chancellor at the suggestion of the Dean

REGISTRATION OF PROSPECTIVE STUDENTS AND OLD STUDENTS

After the announcement of the prospective student making a payment, then uploading the files and then some will be announced and will get the student ID number, after that will get an email for the SIAP SSO account.

Old students are required to re-register or register via SSO SIAP who have previously paid the tuition fees that have been determined according to the academic calendar.

The amount of SPP money for semester I to semester IV for regular classes refers to the rector's regulation, while for cooperation classes it refers to the MOU. The tuition fee for students entering semester V and so on is regulated in the chapteron other provisions in the sub-education costs. Students who have not registered fora semester are not allowed to take part in any academic activities, and those concerned cannot get administrative services.

1. COST OF EDUCATION

Tuition Fees By Course

a. Registration : Rp. 750.000,-
b. Attributes (optional) : Rp. 285.000,-
c. Matriculation : Rp. 3.500.000,-

d. SPI (Institutional Development : Rp. 8.000.000,-
(ad paid once up front)
e. SPP (Education Management) : Rp. 9.000.000,-/Semester

The amount of tuition fees until graduation is summed up from registration to graduation for 3 semesters/18 months is 39.250.00,-. does not include the cost of Research/Thesis Preparation, Field Work Lectures (KKL), Improvement of English Language Skills (TOEFL), Graduation Fees.

Tuition Fees By Research

2. LONG OF STUDY

The length of study including matriculation activities can be taken within 18 (Eighteen) months.

3. NUMBER OF PARTICIPANTS

The number of participants in this Cooperation Program lecture is at least 10 (seven) people.

PARTICIPANT REQUIREMENTS

The Environmental Science Masters Study Program is a multi-entry program. Prospective students must have a bachelor's degree (S1) in various fields of science with an GPA (GPA) 3.00. or have worked in an environment-related field, TOEFL score at entry is at least 450, and at the time of graduation 500, TPA score 500.

1. Registration requirements that will be uploaded and submitted are:
   a. Two legalized photocopies of S1 diplomas.
   b. Two legalized academic transcripts.
   c. Two pieces of color passport size: 3 x 4, and 6 pieces: 3 x 3.
   d. Two sheets of recommendation letters, each from superiors and/or colleagues or former undergraduate academic supervisors.
   e. Written permission from the leadership (for those who have worked).
   f. Certificate of Study Guarantee from the Sponsor.
2. Online registration: www.pendafaran.undip.ac.id

CONTACT PERSON

UNDIP Environmental Science Masters Program: Agus Hastomo, SP
Tel/Fax.: 024-8453635 Email: mil@live.undip.ac.id ; Website: www.mil.undip.ac.id

TEACHING STAFF

The Master of Environmental Science study program is supported by domestic and foreign graduate lecturers. Lecturers come from study programs within UNDIP in accordance with competencies that are in line with courses at PS-MIL UNDIP.

No.	Permanent Lecturer Name(1)	NIDN(2)	Academic Position	Academic Degree	Education S1, S2, S3 and from PT(3)	Areas of Expertise for Every Level of Education
(1)	(2)	(3)	(5)	(6)	(7)	(8)
1	Sudharto Prawoto Hadi ***	0009035404 19540309 1980031003	Professor	Drs. MES, Dr, Prof	S1 : UNDIP, Semarang S2 : York University, Canada S3 : University of British Columbia, Canada	-Environmental Policy - Environmental Planning and Community Empowerment -Environmental Mediation and Negotiation
2	Purwanto ***	0028126103 19611228 1986031004	Professor	Ir. DEA, Dr, Prof	S1 : UNDIP, Semarang S2 : INPT University of Toulouse, France S3 : INPT University of Toulouse, France	-Clean Technology -Eco-efficiency and Sustainable Development -Environmental and Natural Resources Modeling -Solid and B3 Waste Management -Environmental Management System
3	Anies ***	0022075403 19540722 1985011001	Professor	dr. MKK. PKK, Dr, Prof	S1 : UNDIP, Semarang S2 : UNS, Solo S3 : UNJ, Jakarta	-Environmental Medicine -Environmental Management
4	Azis Nur Bambang***	0018095203 19520918 1978031004	Professor	Ir. MS, Dr, Prof	S1 : UNDIP, Semarang S2 : IPB, Bogor S3 : ENSAR Rennes France	-Environmental Economics and Natural Resources
5	Beautiful Susilowati***	0023036306 19630323 1988032001	Professor	Dra. MS, Dr, Prof	S1 : UNDIP, Semarang S2 : Unpad, Bandung S3 : Malaysia	-Eco-efficiency and Sustainable Development
6	Sutrisno Anggoro ***	011125205 19521211 1976031003	Professor	Ir. MS, Dr, Prof	S1 : UNDIP, Semarang S2 : IPB, Bogor S3 : IPB, Bogor	- Fishing - Waters
7	Budiyono***	0020026602 19660220199 1021001	Professor	Ir. M.Si. Dr	S1 :UNDIP, Semarang S2 : ITB, Bandung S3 : UNDIP, Semarang	- Chemical Engineering - Biogas
8	Heru Susanto***	0029057502 19750529199 8021001	Professor	ST, MM MT Dr., Prof	S1 : UNDIP, Semarang S2 : UNDIP, Semarang S2 : ITB, Bandung S3 : Universitait Duisburg-Essen, Germany	- Management - Materials Engineering

No.	Permanent Lecturer Name(1)	NIDN(2)	Academic Position	Academic Degree	Education S1, S2, S3 and from PT(3)	Areas of Expertise for Every Level of Education
9	FX. Adji Samekto***	0018016203 19620118198 7031002	Professor	SH, M. Hum, Dr. Prof		-Environmental Law and Natural Resources
10	Priest Buchori***	0023117006 19701123199 5121001	Professor	ST, Dr.rer.nat, Prof	S1 : ITB, Bandung S2 : University of Vechta, Germany S3 : University of Vechta, Germany	- Spatial Planning and Environment -Geomatics for Spatial Planning -Geomatics for Sustainable Development -Location Analysis for Public Facilities -Disaster Mitigation -Transportation Modeling
11	Henna Rya Sunoko ***	0025085204 19520825 1979032001	Head Lecturer	Dra. MES, Dr	S1 : UI, Jakarta S2 : Dalhousie, Canada S3 : UNDIP, Semarang	-Environmental Toxicology -Biomedical Toxicology - Environmental Management System
12	Fuad Muhammad ***	017067301 19730617199 9031003	Head Lecturer	S.Si, M.Si, Dr	S1 : UGM, Yogyakarta S2 : UGM, Yogyakarta S3 : IPB, Bogor	- Conservation of Natural Resources and Environment
13	Tri Retnaningsih Soeprobowati ***	0029046405 19640429 198903 2 001	Head Lecturer	M.App.Sc, Dr	S1: UGM – Biology S2: Univ of Western Sydney, Australia – Environmental Science S3: UGM – Environmental Science	-Bioindicator of environmental quality
14	Hartuti Purnaweni***	0002126105 19611202 1988032002	Head Lecturer	Dra, MPA, Dr	S1 : UGM, Yogyakarta S2 : School of Public Administration, Canada S3 : UGM, Yogyakarta	- Environmental Planning -Environmental Policy -AMDAL
15	Suherman***	00040876 19760804200 0121002	Lecturer	ST MT Dr.Ing.	S1 : UNDIP, Semarang S2 : ITB, Bandung S3 : Verfahrenstechnik Union of Magdeburg, Germany	- Clean Technique
16	Haryono Setiyo Huboyo ***	014027401 19740214199 9031002	Lecturer	ST, MT, Ph.D	S1 : ITB, Bandung S2 : ITB, Bandung S3 : Kyoto University, Japan	-Air quality management and control
17	Jafron Wasyiq***	0025036407 19640325199 0031001	Lecturer	MSc, Dr		-Bio-ecology of Planctonic Invertebrates
18	Rini Budi Hastuti ***	19610221198 7102001	Head Lecturer	Dra, MSi, Dr		- -Environmental Science and Natural Resources

No.	Permanent Lecturer Name(1)	NIDN(2)	Academic Position	Academic Degree	Education S1, S2, S3 and from PT(3)	Areas of Expertise for Every Level of Education
19	Didi Dwi Anggoro***	001416702 19671114 1993031001	Lecturer	Ir. MEng, Dr	S1 : UNDIP, Semarang S2 : ITB, Bandung S3 : UTM, Malaysia	-catalyst -Technology and Energy Management Planning
20	Hadiyanto***	0028107503 19751028 1999031004	Lecturer	ST, Bsc, MSc, PhD	S1: UNDIP S2: Wageningen Unv. Netherlands S3: Wageningen Unv. Netherlands	-Food and Bioprocess -Chemical Engineering
21	Setia Budi Sasongko ***	0026126104 19611226 1988031001	Head Lecturer	Ir. DEA, Dr	S1 : UNDIP, Semarang S2 : France S3 : UTM, Malaysia	- Modeling -Dynamic System Analysis
22	Palace***	0001037106 19710301199 7021001	Head Lecturer	ST MT Ph.D	S1 : UNDIP, Semarang S2 : ITB, Bandung S3 : Universiti Teknologi Malaysia, Malaysia	- Catalyst and Plasma
23	Syafrudin***	0007115805 19581107198 8031001	Head Lecturer	Ir., CES. MTDr.	S1 : UNDIP, Semarang S2 : ENTP, France S2 : ITB, Bandung S3 : UNDIP, Semarang	- Environmental Engineering -Solid and B3 Waste Management
24	Farikhin***	0020026602 19731220200 0121001	Head Lecturer	Ph.D	S1 : UNDIP, Semarang S2 : ENTP, France S2 : ITB, Bandung S3 : UNDIP, Semarang	- Environmental Engineering - Environmental Statistics
25	Sudarno***	0031017402 19740131199 9031003	Head Lecturer	Ing. M.Sc. Dr	S1: ITB. Bandung S2: Wageningen Unv. Netherlands S3: Wageningen Unv. Netherlands	- Environmental Engineering - Environmental Pollution Control
26	kismartini***	0028036111 19610328198 6032001	Head Lecturer	Dra. M, Si. Dr	S1 : UNDIP, Semarang S2 : UI, Jakarta S3 : Unibraw, Malang	- Environmental Planning - Environmental Policy
27	Sunarsih***	0001095808 19580901198 6032002	Head Lecturer	MSI, Dr	S1 : UNDIP, Semarang S2 : UI, Jakarta S3 : Undip, Semarang	-Environmental Statistics -Dynamic System Analysis
28	ign. Boedi Hendrarto***	0004055211 19520504 197803 1 004	Lecturer	Drs, MSc, Dr		-Conservation of natural resources and the environment

No.	Permanent Lecturer Name(1)	NIDN(2)	Academic Position	Academic Degree	Education S1, S2, S3 and from PT(3)	Areas of Expertise for Every Level of Education
29	Edi Santoso***	0017025504 19550217198 1031001	Head Lecturer	SU, Dr	S1 : UNDIP, Semarang S2 : UGM, Yogyakarta S3 : UNDIP, Semarang	-Environmental Mediation and Negotiation
30	Hermawan***	0023026003 19600223 198602 1 001	Head Lecturer	Ir, DEA, Dr	S1 : ITB S2 : ECL-France S3 : ECL-France	-Technology and Energy Management Planning -Electricity Measurement -Microhydro -Electrical power planning -Electric Power System Stability -Labor Law
31	Muh Yusuf***	0013115804 19581113 198703 1 002	Head Lecturer	Ir., MSi, Dr		-Environmental Science and Natural Resources
32	Dwi P. Sasongko***	0005095804 19580905198 7031002	Lecturer	MSi, Dr		-Environmental and Natural Resources Modeling -AMDAL -Geophysics
33	Eko Patience Concerned***	0003075914 19590703 198503 1 004	Head Lecturer	SH, MH, Dr		-Environmental Law and Natural Resources
34	Bambang Yulianto***	0022076104 19610722 198703 1 002	Head Lecturer	Ir, DEA, Dr		-Environmental Pollution Control -Ecotoxology -Sea Pollution
35	Joesron Ali Syahbana***	0006055104 19510506198 4031001	Head Lecturer	Ir, MSc, Dr	S1 : ITB, Bandung MSc : ITB, Bandung S3 : UGM, Yogyakarta	-Spatial Planning and Environment -City Development Management -Social Planning - Spatial Planning

THESIS INSTRUCTIONS

TABLE OF CONTENTS

CHAPTER I INTRODUCTION

Postgraduate Education The Master Study Program aims to enable master's candidates to have academic and professional abilities to apply and develop science and technology, as well as have broad insight into the environment. Besides that, master's candidates are also directed to develop research abilities towards a doctoral program.

Writing a thesis is a series of most important research activities that must be carried out by prospective masters. This program provides flexibility for prospective masters in determining the field of science that they are engaged in (interest) where master candidates can build and organize various materials/information into a writing that has a certain structure.

During the research period, students are encouraged to publish their thesis in separate papers. The publication of the paper provides dual benefits for master's degree candidates, among others, as a stepping stone for professional development and providing experience in writing scientific reports.

1.1. General Definition of Thesis

1) Definition :
   Thesis is a scientific work compiled by Postgraduate Program students based on research results and as part of the academic activities of the Postgraduate Masters Program
2) OBJECTIVE :
   Thesis writing is intended to develop students' abilities in making scientific works by conducting research.

1.2. Requirements

1) Academic Requirements
   a. Registered as a student in the relevant academic year
   b. Have taken at least 33 credits of the total credits
   c. Have passed the Environmental Research Methodology course
   d. Include the thesis in the Study Plan (IRS)
   e. Have prepared a Thesis Proposal and conducted a Thesis Proposal seminar
2) Administration Requirements
   Have paid SPP & SBP in full for the academic year concerned

1.3. Procedure for Submitting Thesis Guidance

1) Students submit proposals to the Program Chair
2) The Head of the Study Program directs prospective supervisors and determines prospective supervisors with the knowledge of students.
3) Submit a Letter of Appointment of Supervisors to each supervisor who has been determined by the Head of the Study Program accompanied by a draft of the thesis proposal.

1.4. Thesis Guidance Procedure

1) Students consult the topic / thesis proposal draft to Supervisors I and II
2) If the proposal (initial idea) has been approved by the supervisors I and II, the student plans to present the seminar with the supervisors openly
3) Submit an application for a proposal seminar to the Program Chair and coordinate the plan for the day, date and time of the proposal seminar
4) Consulting the improvement of the proposal of the seminar results with the Advisors I and II until it is approved and ready to carry out research

1.5. Thesis Compilation Time

1) The time for the preparation of the thesis can start at the beginning of the second or third semester and no later than the end of the fourth and or fifth semester of the academic year concerned until the signing of the thesis draft.
2) The extension of the time specified must be approved by the Dean of the Graduate School on the recommendation of the Head of the Program
3) The thesis preparation is declared to have been completed if the Advisors I and II have approved and signed the thesis draft.

1.6. Thesis Supervisor

1) In the process of writing a thesis, students are guided by two supervisors (supervisors I and II) who have been appointed by the Head of theProgram on the recommendation of the thesis team.
2) One of the Thesis Supervisors (Supervisor I or Supervisor II) must be permanent lecturers for the MIL Program at Diponegoro University Semarang and other supervisors may be non-permanent lecturers.
3) Thesis Supervisor :
   Advisor I at least academically qualified with a doctorate or applied doctorate degree that is relevant to the study program
   Advisor II at least has academic qualifications from a doctoral degree or an applied doctorate that is relevant to the study program
   The supervisor's task is to assist students in completing the thesis writing as a whole and be responsible until the student can be declared to have passed the thesis exam

1.7. Implementation Stage

1) The implementation of the thesis preparation passes through the following stages:
   a. Preparation of thesis proposal, end of Semester II
   b. Thesis Proposal Seminar (Advisors and Students), the beginning of Semester III
   c. Implementation of Research and Preparation of Thesis, starting in Semester III
   d. Research Results Seminar (Supervisor)
   e. Thesis Seminar (examiner) in Semester IV
2) The thesis is declared complete when the results have been presented before the board of examiners. The result of the thesis is declared valid if ithas been approved and signed by all members of the board of examiners and the head of the program.

3) Students are obliged to improve the thesis on corrections and suggestions from the board of examiners.
   The results of the improvement are consulted to each member of the examiner board.

1.8. Implementation of the Proposal Seminar

Seminar Proposals / Research Proposals: held openly between students, supervisors, and general participants (students) on the campus of the Postgraduate School UNDIP Semarang

1. Implementation Requirements:
   a) Has fulfilled academic and administrative requirements (according to the Proposal/Thesis writing guidebook)
   b) Willingness to attend Team (supervisors I, II) who have been appointed by the Study Program
   c) The willingness to attend general seminar participants has been met (minimum 5 participants)
   d) Availability of a photocopy of a summary of the thesis proposal.
2. Seminar Implementation Time and Arrangement
   a. Seminar implementation time = 1.5-2 hours, is open
   b. Schedule :
      - The opening by the Chairperson of the Session is carried out by the Supervisor I
      - Presentation of Student Presenters: 25 minutes (max)
      - Discussion
      - Response from Student Presenters
      - Rest (students are welcome to leave the room)
      - Advisory Team Conclusion
   c. Note:
      (1) Both Advisor I and Advisor II are written notes for improvement of proposals submitted by students
      (2) The head of the Advisory Team is obliged to lead the proposal seminar and together with the supervisor II sign the Minutes of the Seminar

1.9. Implementation of Research Results Seminar

Seminar Research results: conducted openly between students, supervisors, and the general public (students) on the SPS Undip Semarang campus

1) Implementation Requirements:
   a) Has met the academic and administrative requirements (according to the Proposal/Thesis writing guidebook)
   b) Willingness to attend Team (Advisor I, II), which has been appointed by the Study Program
   c) The willingness to attend general seminar participants has been fulfilled (min 5 participants)
   d) Availability of a photocopy of a summary of the results of the thesis research.
2) Implementation Time and Arrangement of Research Results Seminar
   a. Seminar implementation time = 1.5-2 hours is open
   b. Schedule :

- The opening by the Chairperson of the Session is carried out by the supervisor I
- Study Student Exposure : 25 minutes (max)
- Discussion
- Response from Student Presenters
- Rest (students are welcome to leave the room)
- Team Conclusion
- Advisor

Note:

1) Both Supervisor I and Supervisor II provide written notes to improve the results of research submitted by students
2) The head of the Advisory Team is obliged to lead the seminar on the results of the research and together with the supervisor II sign the Seminar Events

1.10. Thesis Examination

1) The thesis exam is the stage of completing the final task in the Masters Program which is required to be carried out by every student of the Postgraduate School of Diponegoro University with a weight of 6 credits
2) Thesis exam can be held at any time in accordance with the conditions required

The requirements for taking the thesis exam are as follows:

1) Administrative requirements
   a. Have paid all the costs of education coaching (SPP, SBP)
   b. Have paid the thesis fee
   c. Do not have library responsibilities and other administrative responsibilities
2) Academic requirements
   a. Registered as a student in the relevant semester
   b. Have taken and passed all the courses charged
   c. Grade Point Average is greater than or equal to 2.75
   d. Thesis has been approved and signed by the Supervisors (I and II)
   e. Have passed the TOEFL with a minimum score of 450 from SEU Undip, or Institutional Toefl from other organizers
   f. Has written scientific articles in National and International Scientific Journals or presented thesis papers at national and international seminars or proven by scientific papers that have been accepted and will be published/seminared nationally
   g. Submit scientific articles and summaries of theses and theses in the form of soft copies on 2 CDs.
3) Thesis exam is conducted in a closed (the exam is only attended by the students being tested and the examiner team) or open (the exam isattended by the students being tested. The testing team and other students)
4) Test Team
   a) There are 4 (four) examiners in the thesis exam, consisting of: Two (2) supervisors who have met the requirements as examiners

Two (2) examiners who are not supervisors who have met the requirements as examiners appointed and assigned by the head of the Study Program

b) The Chief Examiner is Advisor I or other member of the Examiner Team with the highest academic position jabatan
c) The examiner secretary is a supervisor or other examiner with a rank below the chief examiner
d) Member in accordance with applicable regulations

5) Time and Schedule of Thesis Examination

Each Thesis Examination is given an allocation of approximately 2 hours with the following distribution:

a. Opening by the Head of the Examiner Team, 5 minutes
b. Thesis presentation by students is approximately 25 minutes
c. The discussion of each Examiner Lecturer including student answers is approximately 80 minutes
d. The chief examiner is also in charge of managing the process of the thesis examination
e. The final conclusion by the Testing Team is approximately 10 minutes
f. When the examiner draws the final conclusion, the students being tested are invited to leave the exam room.

6) Rating

a. Report Value weight 60%

The value of the report is given by the examiner and supervisor. Aspects assessed from the report are:

- Report writing techniques
- Conformity of the title with the contents of the report along with the research novelty
- Completeness of the contents of the report
- Research method (sampling technique, analysis and discussion)

b. Presentation Value 30% weight

The value of the presentation is given by the examiner. The aspects that are valued in the presentation are: mastery of the material, the ability to convey arguments and defend opinions and insights about the environment

c. Publication Rate weight 10%

The publication value is given by the manager by looking at the publications from students. The publication value is in two categories, namely (1). Regular national or international seminars/journals/international seminars are not indexed by Scopus with a weight of 4% (2). Scopus indexed international seminars/accredited national journals/ Scopus indexed international journals with a weight of 6%. The weights for both categories depend on status:

Category	Submit	Review/Revision	Accepted-Publish
I	1-2	2.5-3.5	4
II	1-3	4-5	6

7) Final Result Determination Hasil

a. The summary of the assessment of each examiner is the result of the final exam

b. The results of the student thesis exam and its conversion are asfollows:

Letter Value	Big Number Value	Small Number Value
A	80	4
B	>70-79.99	3
C	>50-69.99	2

c. The head of the examination team announces the results of the thesis exam to the student concerned witnessed by other members of the examiner team, while the thesis test scores will be announced after the thesis revision
d. Students are declared successful in the thesis exam if they get a minimum score of C
e. For students who have not obtained a passing grade, they are required to take the thesis exam a maximum of 2 times, with the obligation to pay the cost of the re-thesis exam.
f. Writing revisions suggested by the Examining Team must be carried out by students, in consultation with the supervisor

8) Penalty

A student may be penalized with cancellation of the title, topic or thesis in its entirety, suspension, until expelled for academic considerations if it is proven that:

1. Taking actions that are seen from the point of view of academic ethics is not justified. The head of the MIL program after hearing the considerations and suggestions of the supervisor can propose to the Dean of the Graduate School the possible sanctions that have been set
2. Unable to complete thesis preparation within the allotted time limit

CHAPTER II PART OF THESIS

2.1 Format

The thesis has the following sections:

A. The initial part (opening), consists of:
   1. Front cover page
   2. Title page
   3. Endorsement page
   4. Statement page
   5. biography
   6. Foreword
   7. Table of contents
   8. list of Tables
   9. List of picture
   10. Appendix List
   11. Abstract/Digest

B. The main part (Trunk), consists of:
   Chapter 1 Introduction
   Chapter 2. Literature Review
   Chapter 3. Research Methods
   Chapter 4. Results and Discussion
   Chapter 5. Conclusion and Suggestions
   Chapter 6. Summary

C. The Final Part (Closing), consists of:
   Bibliography
   Attachment

2.2 Beginnings

2.2.1. Front cover page

The front cover (hard cover) is light green (duck egg) written in gold ink:

a) The title of the thesis, located proportionally in the middle of the page
b) The symbol of Diponegoro University with a diameter of about 5.5 cm
c) The word "TESIS" is not followed by another sentence
d) Writing ; Study Program taken
e) The name of the student who is writing the thesis, the student identification number is written in full without abbreviations and without a bachelor's degree
f) Name of educational institution, namely "Environmental Science Study Program" "Postgraduate School" "Diponegoro University, Semarang"
g) Thesis exam year

On the bounded outer edge it is written in italics from top to bottom in gold ink:

a) The last author's name while the previous name is abbreviated, written in capital letters for example, A. MUCHSIN (from Muchsin Algebra)
b) Post: MASTER OF ENVIRONMENTAL SCIENCE
c) Thesis exam year
Sample cover pages can be seen in Appendix 1a and Appendix 1b.

2.2.2. Title page
The title page contains the same things as the cover page
Examples of title pages can be seen in Appendix 1a and 1b

2.2.3. Validity sheet
a. The word "Thesis"

2.2.4. Endorsement page
The authentication page creates:
a) thesis title
b) Sentence: "Composed by"
c) Writer's name
d) Sentence: "Has been defended in front of the examiner team on the date (date of the exam) and declared to have met the requirements for acceptance"
e) Name of supervisor and examiner
f) Approved date
An example of an authorization page is as in Appendix 2

2.2.5. Statement page
The statement page contains a written statement regarding the originality of the thesis, accompanied by the date of manufacture, stamp duty and signed on stamp duty.
An example of a statement page can be seen in Appendix 3.

2.2.6. biography
This page contains a curriculum vitae, especially in terms of formal education that has been undertaken, accompanied by photos.

2.2.7. Foreword
The preface should contain a brief explanation of the background reasons why the author chooses the main problem in the research, the benefits of the research for science and technology and the practical benefits of the research results. In addition, it also includes thanks to all parties (individuals and institutions) who have formed the research from preparation to writing the thesis in detail as a description of the author's intellectual maturity. Publications that have been produced can also be included in the introduction.

2.2.8. Table of contents
The table of contents contains a comprehensive description of the contents of the thesis that can guide the reader if he wants to see a

chapter firsthand. The table of contents contains the order of titles, subtitles & sub-headings along with page numbers.
An example of a table of contents can be seen in Appendix 4

2.2.9. list of Tables
The table list contains the order of table titles and their page numbers
An example of a list of tables can be seen in Appendix 5

2.2.10. list of picture
The list of images contains the order of attachment titles and their page numbers
An example of a list of images can be seen in Appendix 6

2.2.11. Appendix List
The list of images contains the order of attachment titles and their page numbers
An example of a list of attachments can be seen in Appendix 7

2.2.12. Abstract or Digest
Abstract or Digest written in 2 languages, namely Indonesian and English. This paper is the opening of the thesis and generally no more than 500 words (1 page) contains:
a) Main objectives and scope of study
b) A brief (short) explanation of the method used
c) A factual summary of research results
d) Main conclusions
e) Recommendations from research results

2.3 Main Section

2.3.1 Introductory chapter
The introduction should state the background reasons why the selected problem is important to research. Problems should be put into context and text by identifying relevant studies in the field they are engaged in and an outline of the way or path for the master's degree candidate to answer the problems found. It was also stated that this problem had never been solved by previous researchers. It is expressly stated that the difference between this research and the one that has been carried out.
The introduction also includes objectives and hypotheses which are often separated as separate sub-chapters in the introduction. The mainthing that most often happens and needs to be avoided in making an introduction, is the author's tendency to make the introduction a very long review and include too much literature.

2.3.2 Literature Review Chapter
This chapter consists of Literature Review and Hypotheses (if any)

2.3.2.1 Literature review
In its manufacture, it is necessary to avoid the Literature Review whose contents are filled with things that are too

general which are controversial, so that they can give different interpretations. The central point of the research problem is a critical systematic review (critical review) of the results of previous research in the literature used in thepreparation of the thesis. The facts that are reviewed orstated as far as possible are taken from the original source. Writing should be selective so that the red lines between titles, frameworks, research methods and results that provide answers from the central point of the problem can be clearly depicted. The size / breadth of the scope and the number of literature reviews should be discussed well with the supervisors and the committee for the promotion of the master's examination.

2.3.2.2 Hypothesis (if any)

Starting the writing of the hypothesis as far as possible is given the theoretical basis extracted from the Literature Review Chapter. The basis for this theory can be in the form of qualitative descriptions and or mathematical models that are directly related to the field of science being studied in order to formulate hypotheses. The hypothesis is a statement as a temporary answer to the problems encountered in research that still have to be verified.

2.3.3 Method Chapter of Research Method

This chapter is an important chapter for certain fields, especially those related to field research programmes. This chapter describes the method chosen according to the type of research. In addition, it describes in detail the research design, experimental design, sampling program, analytical methods and laboratory procedures. An explanation of the research description can be included here. Types of research are generally grouped as follows:

1) historical research
2) descriptive research
3) developmental research
4) case research and field research
5) correlational research
6) comparative causal research
7) real experimental research
8) quasi-experimental research
9) action research

Things that need attention is the order of writing research methods as follows:

a. Research materials or materials: The specifications should be explained in full. For example, for research in the laboratory, details of the origin, method of preparation and physico-chemical properties are explained for other researchers who wish to re- examine this research.

b. Tools used: given as detailed an explanation as possible and if possible, a drawing/schematic of the atal is given
c. Research path: fully explained the stages of the research along with details of the implementation of the research at each stage. Included here are research design, experimental design, data sampling program (laboratory procedures) and data analysis methods

2.3.4 Chapter Results and Discussion

There are several choices that can be adopted in terms of writing the Results and Understanding Chapter, namely:

a. Separate Research Results and Discussion in separate subtitles
b. make several sub-chapters that contain together the results of research and discussion that are integrated and then given a sub-chapter that contains a general discussion of the overall research results

The author should consult further with his supervisor about the appearance of the Results Chapter and discussion.

If the thesis format follows (a) above, the contents and sub-chapters of Research Results and sub-chapters of Discussion are as follows below. While format (b) is a combination of the two explanations.

2.3.4.1 Research result

The results are usually written sequentially which is also the order of division or stages of research activities. Avoid the tendency to discuss or speculate on research results in the presentation of research results. The results of the research should be arranged in relation to each other to ensure that the thesis can be read coherently, with integrity and is a unified document. As far as possible the results are presentedin the form of tables (lists), graphs, photos and placed as close as possible to the relevant text so that it is easier for readers to follow the description.

2.3.4.2 Discussion

Many masters candidates find this section the most difficult to write. The discussion section is part of the study where the master's degree candidate actually gets more freedom/expression. The main mistake that often occurs is that the discussion is written too simply and is only a summary of the results. Discussion is a place to explore the interests/realities of work/research results and synthesize study results. To begin with, the findings can be compiled/listed first, then the most important findings are discussed first. In certain cases it is not necessary for every result to be discussed and those discussed do not have to be in the same order as in the Research Results. The discussion is better not longer than 1/3 of the entire text in the thesis.

If the discussion is too long, it is better to re-examine the research results carefully, so that they are sure that the

author is not just repeating the results. In concluding the discussion, it is useful to conclude with a summary of the main findings and an indication of the agenda for future research in the same field.

2.3.5 Chapter Conclusion and Suggestions

This chapter consists of conclusion sub-chapters and suggestions sub-chapters which are stated separately

2.3.5.1 Conclusion

The conclusion is a brief statement and the results of the elaboration of the results of research and discussion to prove the truth of the hypothesis (if any). Here the conclusions are made sequentially depending on the weight of the conclusions. The conclusion that is the answer to the main research problem should be placed at the top.

2.3.5.2 Suggestion

Suggestions are made based on the considerations and experiences of the author and are addressed to other researchers in similar fields who wish to continue to develop the research that has been done. It also includes the author's views on matters that need further research in the future

2.3.6 Chapter Summary

The summary is a complete brief summary of the entire thesis content, namely background, literature review, theoretical basis, methods and research results.

Summary is broader than abstract/digest

2.4 Final Part

2.4.1 Bibliography

This section lists all the literature used in the thesis. Libraries that come from personal communications do not need to be included. The bibliography begins with the author's name in alphabetical order. In descending order there is no difference between books and magazines/journals/bulletins, while the difference is in writing to the right.

In general, the order of how to write a bibliography for books and magazines is as follows:

a) Book: author's name, year of publication, book title, volume, issue to number, page referred to (not if all books are referenced), name of publisher, city of place of publication
b) Magazine: author's name, year of establishment, year of publication, title of article, name of magazine abbreviated with official abbreviation, volume, page number referred to

Not all branches of science adhere to the same way of writing a bibliography. Therefore, thesis writers should consult with their supervisors to adjust the method of writing a bibliography with their respective fields of knowledge.

2.4.2 Attachment

The appendix contains material that is not a central factor in interpreting the research results and complements the main part of the thesis. Annexes should be available if re-examination of the analysis results is required. The appendix does not need to include all the raw data collected during the study

CHAPTER III WRITING PROCEDURES

3.1 material

1) Script

The manuscript is made on 80 gram HVS paper with a size of 21 cm x 28 cm (=A4)

2) Cover
   The cover is made of bufalo paper or similar with a light blue color (duck egg) that is printed on the cover the same as on the title page.

3.2 Typing

1) Font type :
   a. The typeface typed for the manuscript is Arial 12 or Times New Roman 12
   b. Italics (italics) are only allowed for certain purposes (eg species names, foreign words)
   c. Symbols, Greek letters or other signs that cannot be typed are neatly written in black ink
2) Numbers and Units
   a. Numbers are typed with numbers, except at the beginning of sentences
   b. Decimal numbers are marked with commas: for example body weight 75.8 g
   c. Units are stated with official abbreviations without a dot behind them, for example: m, g, kg, ha, cal
3) Line Spacing
   The distance between lines is 1 space, except abstract/digest, direct quotation, title of list (table) and figure and bibliography is 1 space
   The distance from the title to the subtitle or text is 4 spaces, from the text to the subtitle 3 spaces, from the text to the sub-subheading 3 spaces, while from each subtitle to the text 3 spaces
4) Edge Border
   The borders of the paper are:
   a. Ttop epi:4cm
   b. Bottom edge:3cm
   c. Left edge:4cm
   d. Right edge:3cm
5) Space Utilization
   Typing space should be full and try not to waste anything, except when starting a new paragraph, list, image, subtitle or other special thing.
6) New Aline
   The new paragraph starts at the 6th type from the left border
7) Sentence Beginning
   The beginning of the sentence must be a word, number, symbol or chemical formula must be spelled, for example: Eight heads of families
8) Title, Subtitle, Sub-Sub-Title
   a. The title is typed in bold capital letters (blod), the size is larger than the text font (14 pt), arranged symmetrically in the middle with a distance of 4 cm from the top edge without ending a dot.
   b. Subtitles are placed on the left border of all words typed in bold (blod), without ending with a period
   c. Sub-subtitles are placed on the left, all words are typed in bold.

d. Sub-sub-titles, starting at the 6th type, are typed as well as subtitles ending with a period. The first sentence is typed immediately after the period

9) Manuscripts that must be arranged downwards are detailed using serial numbers of numbers or letters according to the degree of detail and are not allowed to use other signs.

10) Laying
Pictures, tables, equations, formulas, titles, subtitles are all placed symmetrically to the left and right edges of typing. Images are made on a separate sheet of paper, not combined with text.

3.3 Number

1. Page
   a. Page numbers are placed on the top right with a distance of 3 cm from the right edge and 1.5 cm from the top edge tepi
   b. Title page up to abstract (digest) are numbered with lowercase Roman numerals (i, ii, iii, iv)
   c. The next page is numbered with Arabic numerals (1,2,3, etc.)
   d. Pages with chapter titles are not given page numbers
2. Table (list)
   Table numbering is to use sequential numbers with Arabic numerals
3. Picture
   Images are numbered sequentially with Arabic numerals
4. Formula
   Each equation is numbered in brackets with Arabic numerals placed behind the equation near the right edge (3 cm from the right edge).

   Example: H2SO4+NaOH Na2SO4+H2O

3.4 Tables (Lists) and Pictures

1. Table
   a. The table title is placed symmetrically left-right above the table. The distance of the table title to the table is 2 spaces, while the text distance is 1 space
   b. Tables can be placed between text, but can also be placed on a separate page. Distance from text to table title to text : 3 spaces
   c. Avoid breaking the table
2. Picture
   a. Images include charts, graphs, photo maps
   b. Images are placed on separate pages, made as clear as possible and symmetrical
   c. The title of the image is placed symmetrically below the image and the description is typed in the image not on another page

3.5 Name

1. The author's name is referred to in the manuscript/text
   The author's name referred to is written only the last name (surname) without a bachelor's degree. If there are more than 2 names, it is sufficient

to write the name of the first author followed by et al, or et.al (for authors whose manuscripts are in foreign languages).

a. Brown (1998) found.....
b. An increase in income from the informal sector (Danis, 1994), resulting in adequate living welfare in rural areas
c. Some pathogenic fungi can grow on imperfectly packaged products 9 Bagito and Achmad, 1991)
d. The thickness of the film on glass is generally about 0.1 mm (9Senna, et al., 1997).....

2. In certain fields of science there are different ways of writing, for example by including a small number (subscript) in the sentence/word that is referred to to state the source of the library contained in the bibliography.
   Example :
   a. The procedure for implementing the law is still closely related to socio-cultural history12
   b. Taking into account the risk factors for hypertension34, special treatment is needed for patients with hypertension
3. Author's name in the bibliography
   All authors must be listed in the bibliography, not only et al or et al are allowed. Bibliography authors can also follow the provisions that are generally used per field of science/discipline.

3.6 Footnotes and Quotes

1. Footnote
   For certain disciplines, it is allowed to make footnotes, but it is better to avoid writing footnotes. Writing footnotes is done with a distance of 1 space and indented to the middle 6 types from the left edge
2. Quote
   Quotations are typed indented to the middle 6 types from the left edge with a distance of 1 space, if quotes in foreign languages are not translatedbut can be discussed.

3.7 Attachment

The title of the attachment is placed symmetrically starting with the words: attachment and attachment number and the table (list) or image that is the attachment.
Example:

1. Table of grain price fluctuations in local markets
2. Picture

Appendix 1a. Example of cover title page

FOREST MANAGEMENT WITH THE COMMUNITY
IN THE FRAMEWORK OF SUSTAINABLE FOREST MANAGEMENT

1 space Times New Roman 14
or Verdana 12

2.0 Cm

Thesis proposal

Hertiarto
L4K002011

Time Roman 11
Verdana 9

Time Romance 12
Verdana 10

MASTER STUDY PROGRAM OF ENVIRONMENTAL SCIENCE
GRADUATE SCHOOL
DIPONEGORO UNIVERSITY
SEMARANG
2018

Appendix 1b. Example of cover title page

FOREST MANAGEMENT WITH THE COMMUNITY
IN THE FRAMEWORK OF SUSTAINABLE FOREST MANAGEMENT

1 space Times New Roman 14
or Verdana 12

2.0 Cm

Thesis Result Proposal

Hertiarto
L4K002011

Time Roman 11
Verdana 9

Time Romance 12
Verdana 10

MASTER STUDY PROGRAM OF ENVIRONMENTAL SCIENCE
GRADUATE SCHOOL
DIPONEGORO UNIVERSITY
SEMARANG
2004

Appendix 1c. Example of cover title page

FOREST MANAGEMENT WITH THE COMMUNITY
IN THE FRAMEWORK OF SUSTAINABLE FOREST MANAGEMENT

1 space Times New Roman 14
or Verdana 12

2.0 Cm

Thesis

Hertiarto
L4K002011

Time Roman 11
Verdana 9

Time Romance 12
Verdana 10

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GRADUATE SCHOOL
DIPONEGORO UNIVERSITY
SEMARANG
2004

Kapital Time New Roman 12 Or
Verdana 10

Left Meeting Vertical
Times New Roman 12 or
Verdana 10

Diameter 1 Cm

Kapital Times New Roman 12/Verdana 10

Appendix 2. Sample validation page (Before Thesis)

THESIS/THIS PROPOSAL

FOREST MANAGEMENT WITH THE COMMUNITY
IN THE FRAMEWORK OF SUSTAINABLE FOREST MANAGEMENT

Arranged by

Hertiarto
L4K002011

Knowing,
Advisory Commission

First Advisor Second Advisor

Dean of Graduate School Head of Study Program

Environmental Science

Appendix 3. Sample Confirmation Page (Post Seminar/Exam)

VALIDITY SHEET

FOREST MANAGEMENT WITH THE COMMUNITY
IN THE FRAMEWORK OF SUSTAINABLE FOREST MANAGEMENT

Times Roman 14 or Verdana 12

Arranged by

Times Roman 11
Or verdana 9

Hertiarto
L4K002011

Has been defended in front of the Testing Team
On December 30, 2004
and declared to have met the requirements for acceptance

ChairmanSignature

....

Member
1. ....
2. ....
3. ....

Appendix 4. Sample Statement Page

STATEMENT

I solemnly declare that the thesis that I have compiled as a condition for obtaining a Master's degree from the Environmental Science Masters Study Program is entirely my own work.

As for certain parts of the thesis writing that I quoted from the work of others, the source has been clearly written in accordance with the norms, rules and ethics of scientific writing.

If in the future it is found that all or part of this thesis is not the result of my own work or there is plagiarism in certain parts, I am willing to accept the sanction of revocation of my academic degree and other sanctions in accordance with the applicable laws and regulations.

Semarang.....

Stamp 10,000

Student name

Appendix 5 Author Biodata

Times Roman 12 or Arial 12 . font

TABLE OF CONTENTS Page

Appendix 7. Example of a table list

LIST OF TABLES

Page

Appendix 8. Example of a list of pictures

LIST OF PICTURE

Page

Appendix 9. Example list of attachments

APPENDIX LIST

Page

Appendix 10. Examples of writing titles, subtitles and others

1. Title

3.1. Subtitles
The first sentence after the subtitle is written as a new line

3.1.2. Sub subtitles
The first sentence after the subtitle is written as a new paragraph

3.1.2.1. Sub sub subtitle
The first sentence after the subtitle is written as a new paragraph

Child subtitles. The first sentence is typed immediately after the period. Sub-subtitles can also be bolded and/or underlined.

Appendix 11. Example of writing a bibliography

BIBLIOGRAPHY

Caiden, GE, 1982. Strategies for administrative reform. Lexington Books, Toronto

Danusaputra, St. Munadjat, 1980. Environmental law. Book II, Bina Cipta, Bandung

Franceys, R., J. Pickfort and R. Reed., 1992. A Guide to the development on site sanitation., WHO, France

Giannetti, JP and AJ Peeota, 1975. Selective hydrocracking with ferrierite-based catalyst. Eng. Chem. Process des. Dev., 14, 86-92

Hutt, C., 1978. Towards a taxonomy and coceptual model of play. In SJ Hutt. DA

IRRI 2005. Atlas of Rice & World Rice Statistics. http://www.irri.org/

Looper, MG.., 1985. Risk man made hazards to men. Claredon Press. Oxford

Othmer, DF and WF Schurig, 1941. Destructive distillation of maple wood. eng. Eng Chem., 33. 188-189.

Pelunin, NVC, MK Halim and KMST Kvalvagnaes, 1983. West Bali: an Indosian marione protected area and its respurces. Biological Conservation 25(2), 171- 191

Rogers and C., Hutt (eds.) Developmental processes in early education. Routledge & Kegan Paul, London

GUIDE FOR FORMAT OF SCIENTIFIC ARTICLES
FROM THE RESULTS OF THE MASTER OF ENVIRONMENTAL SCIENCE STUDENTS
DIPONEGORO UNIVERSITY

TITLE

The title is written in capital letters briefly and clearly by using the font Times New Roman 14 or Verdana 12. The number of words for the title is no more than 20 words, and is typed with 1 space.

AUTHOR IDENTITY

The identity of the author (name of student, supervisor I, supervisor II} written in Times New Roman 10 or verdana 8 font, typed I in a space, complete by including the institution of the Environmental Science Masters Program, Diponegoro University, telephone/fax number and e-mail address

ABSTRACT

Abstract is written in two versions, namely in Indonesian and English, and is typed with 1 space. The number of words for the abstract is not more than 200 words, and includes an explanation of the topic of the problem being studied, the method used and the results obtained. Include the key words after writing the abstract,

PRELIMINARY

The introduction and subsequent sections are written using Times New Roman 12 or Verdana 10 font, with 1.5 spaces (except bibliography). The introduction includes an explanation of the background, problem approach, literature review, and an outline of the method used.

RESEARCH METHODS

Contains locations, materials, samples and methods used in the study conducted, and is written clearly and coherently. Don't forget to include references for each method used

RESULTS AND DISCUSSION

The results obtained are displayed in the form of labels or graphs and each aspect is discussed and its relation to other aspects. Compare with the results of other related studies. Explain the advantages and disadvantages obtained

CONCLUSIONS AND SUGGESTIONS

Explain the conclusions obtained. Have these conclusions answered the problems discussed? If not, what are the suggestions that need to be followed up further?

BIBLIOGRAPHY

The bibliography displays all the libraries used in writing scientific articles, and is arranged alphabetically according to the guidelines for writing a bibliography. The bibliography is written using Times New Roman 10 or Verdana 8 font, with 1 space

Note: the content of scientific articles is not more than 10 pages including the bibliography (number the pages). The paper size used is A4 with margins: top 3.0 cm, bottom 2.5 cm. Left 3.0 cm, and right 2.5 cm. Strive for the appearance of pictures, tables, and graphs presented in a proportional but clear enough to understand

Appendix 2a. Example of cover title page

SCIENTIFIC ARTICLES

By :

_____

NIM

MASTER STUDY PROGRAM OF ENVIRONMENTAL SCIENCE
GRADUATE SCHOOL
DIPONEGORO UNIVERSITY
SEMARANG
2004