



MODULE HANDBOOK

Master Program Environmental Management



MODULE DESCRIPTION OF PHILOSOPHY OF SCIENCE

Module	Philosophy of Science				
Module-level	Postgraduate				
Code	18P03210102				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Ambo Tuwo, DEA				
Lecturer(s)	Prof. Dr. Ir. Ambo Tuwo, DEA Prof. Dr. Ir. Eymal B. Demmalino, M.Si Dr. Ir. Muhammad Farid Samawi, M.Si				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Compulsory			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to explain philosophy and its implications in environmental management</p> <p>CLO-2 Be able to explain the holistic vs environmental management paradigm, the Cartesian Newtonian hegemonic paradigm vs environmental management.</p> <p>CLO-3 Able to explain scientific developments and implications philosophy vs environmental management, and reconciling material awareness vs environmental management.</p>				

Content	Philosophy of science and its implications in environmental management which includes the understanding of philosophy, understanding of philosophy of science, substance of philosophy of science, dimensions of study of philosophy of science, development and application of theory, holistic paradigm vs. environmental management, hegemony of the Cartesian Newtonian paradigm vs. environmental management, development of science and its philosophical implications vs environmental management, and reconciliation of material awareness vs environmental management.
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Capra, Fritjof. 1975. The Tao of Physics. An Exploration of the Parallels Between Modern Physics ad Eastern Mysticism. Shambhala. 330 p. 2. Capra, Fritjof. 2002. Titik Balik Peradaban. Bentang budaya. 571 p. 3. Heriyanto, Husain. 2003. Paradigma Holistik. Teraju. 231 p.

MODULE DESCRIPTION OF THEORY OF ECOLOGY (GENERAL & HUMAN)

Module	Theory of Ecology (General & Human)				
Module-level	Postgraduate				
Code	18P03210202				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Sharifuddin Bin Andy Omar, M.Sc				
Lecturer(s)	Prof. Dr. Ir. Sharifuddin Bin Andy Omar, M.Sc Prof. Dr. Ir. Ngakan Putu Oka, M.Sc Prof. Dr. Ir. Eymal B. Demmalino, M.Si				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Compulsory			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	1	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to explain ecological theory and its relationship to the environment CLO-2 Able to explain ecosystems and several examples, energy in ecosystems, biogeochemical cycles, limiting factors, population, community, food and its problems, air pollution, and water and its management,				

Content	This course will teach students: ecology and its relationship to the environment, ecosystems and several examples, energy in ecosystems, biogeochemical cycles, limiting factors, population, community, food and its problems, air pollution, and water and its management,
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Allaby, M. 2002. Basics of Environmental Science. Second Edition. Routledge, London. 323 p. 2. Berg, L.R., M.C. Hager, & D.M. Hassenzahl. 2011. Visualizing Environmental Science. Third edition. John Wiley & Sons, Inc., Hoboken, New Jersey. 489 p. 2. Bowman, W.D., S.D. Hacker, & M.L. Cain. 2017. Ecology. Fourth edition. Sinauer Associates, Inc., Sunderland, U.S.A. 745 p. 3. Cunningham, W.P. & M.A. Cunningham. 2012. Environmental Science: A Global Concern, Twelfth Edition. The McGraw-Hill Companies, Inc., New York. 612 p. 5. Cunningham, W.P. & M.A. Cunningham. 2013. Principles of Environmental Science: Inquiry & Applications. Seventh Edition. The McGraw-Hill Companies, Inc., New York. 457 p. 6. Dwidjoseputro, D. 1994. Ekologi. Manusia dan Lingkungannya. Penerbit Erlangga, Jakarta. 133 hal.

MODULE DESCRIPTION OF GLOBAL & NATIONAL ENVIRONMENTAL POLITICS

Module	Global & National Environmental Politics				
Module-level	Postgraduate				
Code	18P03210302				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Dr. Ir. Rijal Idrus, M.Sc				
Lecturer(s)	Dr. Ir. Rijal Idrus, M.Sc Dr. Abygael Moor, M.Si Prof. Dr.Ir. Baharuddin Nurkin, M.Sc				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Compulsory			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to explain the factors causing scarcity and destruction of natural resources, global environmental problems and the evolution of the development of the sustainable development paradigm</p> <p>CLO- 2 Able to understand the concept of ownership of natural resources, regime international environment, actors and their roles in global environmental politics</p> <p>CLO-3 Able to formulate the process of forming an international environmental regime involving various interested actors accompanied by case study examples</p> <p>CLO-4 Able to analyze and monitor various impacts of development on the environment and develop strategies for managing environmental development</p>				

Content	Through this course students will learn about: the spectrum of environmental problems at a number of levels ranging from local, national, regional, to global. It then describes the development of the sustainable development paradigm in international fora as an instrument of global environmental policy, the actors who play a role in the arena of global environmental politics, and the implications for national environmental policy in Indonesia. This course is enriched by presenting case studies of national environmental problems with global implications.
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion CO-4 Written test
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Bryant, R.L. and Bailey, S., 1997. Third World Political Ecology. Routledge, London. 241 pp. 2. Chasek , P.S.D.L, Downia, and J.W. Brown. 2006. Global Environment Politics. Fourth. Ed. Westview Press. Boulder, Colorado. 3. Klein, Naomi. 2014. This Changes Everything: Capitalism versus the Climate. Simon & Schuster Publ. NY and London. 535 pp. 4. Miller, M.A. 1995. The Thirld World in Global Environmental Economics. Lynne Rienner Publishers, Colorado. 181 pp. 5. Robbins, Paul. 2012. Political Ecology: A Critical Introduction. 2nd Ed. Wiley Blackwell Publication. 299 pp. 6. Ronald B. Mitchell, R.B., Clark, W.C., Cash, D.W., and Dickson, N.M. [editors]. 2006. Global Environmental Assessment: Information and Influence. MIT Press. 361 pp.

MODULE DESCRIPTION OF ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

Module	Environmental Impact Assessment (EIA)				
Module-level	Postgraduate				
Code	18P03210403				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Hazairin Zubair, M.Si				
Lecturer(s)	Prof. Dr. Ir. Hazairin Zubair, M.Si Prof. Dr. Ir. Eymal B. Demmalino, M.Si Prof. Dr. Ir. Baharuddin Nurkin, M.Sc				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Compulsory			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	2.2	25		
	Presentation and discussion	1	25		
	Field Trip	3	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	5.2	2.2	2.2	136 h	5.1
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to explain the concepts and techniques of AMDAL (Environmental Impact Analysis) as one of the instruments for environmental management</p> <p>CLO-2 Able to work independently or in a team to develop and apply AMDAL concepts and techniques</p> <p>CLO-3 Able to follow developments and be broad-minded and adaptive in developing and applying AMDAL concepts and techniques</p>				

Content	Development and environment, logic and philosophy of EIA, screening, scoping, description of activity plans, environmental baseline, potential impact evaluation, study area boundaries and study time, significant impact estimates, significant impact evaluation, environmental feasibility and infeasibility, management approaches and approaches environmental monitoring
Study and examination requirements and forms of examination	Face to face lectures: 3 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion
Media employed	LCD, a website, computer, library
Literature	<ol style="list-style-type: none"> 1. Anonimus, 2007. Panduan Pelingkupan dalam AMDAL. Deputi Bidang Tata Lingkungan Kementerian Negara Lingkungan Hidup~DANIDA, Jakarta. 2. Bom, S. M. and W.C. Sonzogni, 1995. Integrated Environmental Management : Strenthening the Conceptualization. Journal of Environmental Management. Vol. 19 No. 2 : 167 – 181 3. Canter, L.W. 1996. Environmental Impact Assesment. Mc Graw-Hill, Inc., New York. 4. Margerum, R.D. and S.M. Bom. 1995. Integrated Environmental Management : Moving from Theory to Praktice. Journal of Environmental Planning and Management. Vol. 38 No. 3 : 371~391. 1. Otto Soemarwoto. 1997. Analisis Mengenai Dampak Lingkungan. Gajah Mada University Press, Yogyakarta. 2. Sadar, M.H. 1994. Environmental Impact Assesment. Carleton University Press, Ottawa. 3. Peraturan Perundang-undangan yang terkait dengan AMDAL

MODULE DESCRIPTION OF ENVIRONMENTAL MANAGEMENT

Module	Environmental Management				
Module-level	Posgraduate				
Code	18P03210503				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Ngakan Putu Oka, M.Sc				
Lecturer(s)	Prof. Dr. Ir. Ngakan Putu Oka, M.Sc Prof. Dr. Ir. Amran Achmad, M.Sc Prof. Dr. Eymal B. Demmalino, M.Si				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	2.2	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	3.2	2.2	2.2	136 h	5.1
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to identify and evaluate the potential of natural resources and human activities which has the potential to affect the sustainability of natural resources</p> <p>CLO-2 Able to develop innovations in sustainable natural resource management for support sustainable development</p> <p>CLO-3 Able to develop the potential for natural resources and ecosystem services to increase people's welfare and increase the country's foreign exchange</p>				

Content	Various types of natural resources and their categorization, characteristics of natural resources, the importance of sustainable management of natural resources to support community welfare and sustainable development, as well as learning to create innovations in sustainable natural resource management.
Study and examination requirements and forms of examination	Face to face lectures: 3 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion
Media employed	LCD, a website, out, computer, library
Literature	<ol style="list-style-type: none"> 1. Cunningham, A., Belcher, B., dan Campbell, B. 2005. Carving Out A Future. Forests, Livelihoods and The International Woodcarving Trade. UK: Earthscan. 2. Darajati, W., Pratiwi, S., Herwinda, E., Radiansyah, A. D., Nalang, V. S., Nooryanto, dan B. 2016. Indonesia Biodiversity Strategy and Action Plan 2015-2020. Jakarta: Kementerian Perencanaan Pembangunan Nasional/BAPPENAS. 3. De Beer, J. H. dan McDermott, M. J. (1996). The Economic Value of Non-Timber Forest Products in Southeast Asia. Amsterdam: Netherlands Committee for IUCN. 4. Eropian Environment Agency. 2005. Sustainable Use and Management of Natural Resources. EEA Kopenhagen. pp: 68 5. Jagger, P., Sills, E. O., Lawlor, K., dan Sunderlin, W. D. 2011. Pedoman untuk Mempelajari Berbagai Dampak Proyek REDD+ bagi Mata Pencarian. Occasional Paper 67. Bogor: CIFOR. 6. Karsenty, A. 2000. Economic Instruments for Tropical Forests. The Congo Basin Case. London: CIFOR, CIRAD, IIED. 7. Kusters, K. dan Belcher, B. 2004. Forest Products, Livelihoods and Conservation. Case Studies of Non-Timber Forest Product Systems. Vol. 1 Asia. Jakarta: CIFOR. 8. Maryanto, I., Rahajoe, J. S., Munawar, S. S., Dwiyanto, W., Asikin, D., dan Ariati, S. R. 2013. Bioresources untuk Pembangunan Ekonomi Hijau. Jakarta: LIPI Press. 9. Murdiyarso, D. 2003. CDM: Mekanisme Pembangunan Bersih. Jakarta: Penerbit Buku Kompas. 10. Neumann, R. P. dan Hirsch, E. 2000. Commercialisation of Non-Timber Forest Products: Review and Analysis of Research. Jakarta: CIFOR. 11. Ngakan, P.O., Komarudin, H., Achmad, A., Wahyudi, dan Tako, A. 2008. Ketergantungan, Persepsi dan Partisipasi Masyarakat terhadap Sumberdaya Hayati Hutan. Center for International Forestry Research. Bogor. pp: 36

MODULE DESCRIPTION OF CONSERVATION OF NATURAL RESOURCES

Module	Conservation of Natural Resources				
Module-level	Posgraduate				
Code	18P03210603				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Dr. Ir. Usman Arsyad, M.P				
Lecturer(s)	Dr. Ir. Usman Arsyad, M.P Dr. Abygael Moor, M.Si				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	2.2	25		
	Presentation and discussion	1	25		
	Field Trip	3	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	5.2	2.2	2.2	136 h	5.1
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to explain the basic principles of ecology, ecosystem organization and human ecology, ecosystem organization and human ecology, types of ecosystems,</p> <p>CLO-2 Able to explain threats to natural ecosystems, threats to human ecosystems and ecosystem dynamics,</p> <p>CLO-3 Able to describe the reverse impact of ecosystem damage to humans, sustainable development (environmentally sound),</p> <p>CLO-4 Able to explain the application of ecological principles in conservation in the fields of: agriculture, forestry, management of freshwater and marine ecosystems, management of coastal and mangrove ecosystems, management of urban ecosystems and tourism.</p>				

Content	This course teaches students: Review of the basic principles of ecology, Ecosystem organization and human ecology, Ecosystem organization and human ecology, Types of ecosystems, Threats to natural ecosystems, Threats to human ecosystems, Ecosystem dynamics, The reverse impact of ecosystem damage to humans , Sustainable development (environmentally sound), Application of ecological principles in conserving fields: agriculture, forestry, management of freshwater and marine ecosystems, management of coastal and mangrove ecosystems, management of urban ecosystems and tourism.
Study and examination requirements and forms of examination	Face to face lectures: 3 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion CO-4 Written test
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Cunningham, W.P. and Saigo, B.W. 1995. Environmental Science : a global concern. Wm.C.Brown Publishers. Pp : 612 2. Norton, B.G. 1991. Toward Unity Among Environmentalists. Osford University Press. Pp : 287 3. Landel-Mills, N. and Poras, I. T. Silver Bullet or Fools Gold ? : A global review of markets for forest environmental services and their impacts on the poors. Internasional Institute for Environment and Development (IIED). Pp : 254. 4. Blockhus J. M. Dillebeck, M. Sayer, J.A. and Wegge, P. (Eds). 1992. Covering Biological Diversity in Managed Tropical Forest. IUCN and ITTO. Pp : 244 5. Purwanto, E. 2007. Nasionalisme Lingkungan. Debut Wahan Sinergi. Pp : 182

MODULE DESCRIPTION OF ENVIRONMENTAL TECHNOLOGY

Module	Environmental Technology				
Module-level	Postgraduate				
Code	18P03210703				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Dr. Ir. Muhammad Farid Samawi, M.Si				
Lecturer(s)	Dr. Ir. Muhammad Farid Samawi, M.Si Prof. Dr. Fahrudin, M.Si Dr. Mahatma Lanuru, ST.				
Language	Indonesian				
Relation to curriculum	Program		Mode		Semester
	MSc. Environmental Science		Elective		Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	2.2	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	3.2	2.2	2.2	136 h	5.1
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to apply technology in solving environmental problems that arise as a result of pollution originating from nature and from human activities.</p> <p>CLO-2 Able to evaluate environmental pollution after knowing regulations related to the environment, including environmental quality standards at the international level.</p> <p>CLO-3 Able to explain effective and environmentally friendly contamination prevention technology</p>				

Content	Provide an overview and develop the competence of technology students in solving environmental problems that arise as a result of pollution originating from nature and from human activities. Environmental technology includes overcoming water, air and land pollution, such as by implementing a recycling pattern, namely 3 R (reuse, reduce and recycle), which is one solution for waste management coupled with replanting or what is called revegetation. Apart from that, students can evaluate environmental pollution after knowing the regulations related to the environment, including environmental quality standards at the international level. One technology for dealing with contamination from polluting materials that is effective and environmentally friendly is bioremediation
Study and examination requirements and forms of examination	Face to face lectures: 3 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion
Media employed	LCD, a website, library
Literature	<ol style="list-style-type: none"> 1. Alexander, M. 1994. Biodegradation and bioremediation. New York: Academic Press. 2. Chapelle, F. 1999. Ground-water microbiology and geochemistry. New York: John Wiley and Sons. 3. Darajati, W., Pratiwi, S., Herwinda, E., Radiansyah, A. D., Nalang, V. S., Nooryanto, dan B. 2016. Indonesia Biodiversity Strategy and Action Plan 2015-2020. Jakarta: Kementerian Perencanaan Pembangunan Nasional. 4. Environmental Protection Agency, Hazards Methods, United States Environmental Protection Agency 5. Eropian Environment Agency. 2005. Sustainable Use and Management of Natural Resources. EEA Kopenhagen. 6. Fahrudin, 2010. Bioteknologi Lingkungan. Alfa Beta, Bandung 7. Lily Barlia, 2010. Mengajar dengan Pendekatan Lingkungan Alam Sekitar. Royyan Press, Bandung. 8. Murdiyarso, D. 2003. CDM: Mekanisme Pembangunan Bersih. Jakarta: Penerbit Buku Kompas. 9. Satrawijaya, A. Tresna 1991. PencemaranLingkungan; Rineka Cipta, Jakarta. 10. Soerjani, Moh, 1987. Lingkungan : Sumber Alam dan Kependudukan Dalam Pembangunan; Universitas Indonesia. 11. Stankey, G.H., Clark, R.N., dan Bormann, B.T. 2005. Adaptive Management of Natural Resources: Theory, Concept, and Management Institutions. USDA. Portland.

MODULE DESCRIPTION OF ENVIRONMENTAL SOCIOLOGY AND ANTHROPOLOGY

Module	Environmental Sociology and Anthropology				
Module-level	Posgraduate				
Code	18P03210803				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Hamka Naping, M.A				
Lecturer(s)	Prof. Dr. Hamka Naping, M.A Prof. Dr. Pawennari, M.A Prof. Dr. Ir. Eymal B. Demmalino, M.S.i				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	2.2	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	3.2	2.2	2.2	136 h	5.1
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to have a high commitment to maintaining environmental quality</p> <p>CLO-2 Able to have accuracy and skills in applying theory in identifying, formulating, and analyzing various environmental problems</p> <p>CLO-3 Having quality in conducting analysis and monitoring of various development impacts on the environment and in developing strategies for managing environmental development</p> <p>CLO-4 Have sensitivity and responsiveness to various environmental problems faced by the community and other stakeholders.</p>				

Content	This course schedules a number of discussion materials: (1) Sociology & Environmental Anthropology Ontology, (2) Mind Map in Human Relations with the Environment, (3) Theory Linkage with Phenomenon of Environmental Management Practices, (4) Theory of "Risk Society" and "Ecological Modernization" (5) Theory of "Ecological Symbolism" and "Resources~ Dependency Model" (6) Social Capital and Environmental Management, (7) Ecofeminism, (8) Multi Stakeholder Approach (MSA), and (9) Environmental Ethics.
Study and examination requirements and forms of examination	Face to face lectures: 3 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion CO-4 Written test
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Dickens, Peter, 1992. Society and Nature : Towards a Green Social Theory. New York : Harvester – Wheatsheaf. 2. Dwi Susilo, R.K. 2008. Sosiologi Lingkungan. Jakarta : Rajawali Press. 3. Field, John, 2010. Modal Sosial (Terjemahan). Yogyakarta : Kreasi wacana 4. Goldblatt, David, 1996. Social Theory and Environmental. Cambridge : Polity Press. 5. Rai, J.S. S. Thorheim, A. Dorjderem and D. Macer, 2010. Universalism and Ethical Values for the Environment. Ethics and Climate Change in Asia and the Pacific (ECCAP) Project Working Group 1 Report, Bangkok : UNESCO 6. Redclift, Michael and Ted Benton (Eds.), 1997. Social Theory and The Global Environment. London~New York : Routledge. 7. Shiva, Vandana and Maria Mies, 2005. Ecofenisme : Perspektif Gerakan Perempuan dan Lingkungan. Yogyakarta : IRE Press. 8. Carolan, M., 2005. "Realism without Reductionism : Toward an Ecologically Embedded Sociology". Journal of Human Ecology Review, Vol. 12 No. 1 9. Glaser, M., 2006. "The Social Dimension in Ecosystem Management : Strengths and Weakness of Human Nature Mind~maps", Journal of Human Ecology Review, Vol. 13 No. 2

MODULE DESCRIPTION OF ECONOMICS OF NATURAL RESOURCES AND ENVIRONMENT

Module name	Economics of Natural Resources and Environment				
Module-level	Posgraduate				
Code	18P03210902				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Didi Rukmana, M.Sc				
Lecturer(s)	Prof. Dr. Ir. Didi Rukmana, M.Sc Dr. Hamzah Tahang, S.Pi, M.Si Dr. Ir. Mahyuddin, M.Sc				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Compulsory			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to have a high commitment to maintaining environmental quality</p> <p>CLO-2 Able to have accuracy and skills in applying theory in identifying, formulating and analyzing various environmental problems</p> <p>CLO-3 Having quality in conducting analysis and monitoring of various development impacts on the environment and in developing strategies for managing environmental development</p> <p>CLO-4 Have sensitivity and responsiveness to various environmental problems faced by the community and other stakeholders.</p>				

Content	This course teaches students: development of development paradigms, basic principles of environmental management, basic concepts of the relationship between natural ecosystems and the economy, economic welfare, economic and environmental relationships, optimal use of natural resources, economic analysis in the planning aspect, economic instruments in management Natural resources and the environment, population problems, interactions between economic, environmental, social and cultural aspects in development, the concept of sustainable development, and policies for manipulating environmental pollution variables and assimilative ability variables.
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion CO-4 Written test
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Benyamin, I Made, 2000. Instrumen-Instrumen Ekonomi dalam Pengelolaan Sumberdaya Alam dan Lingkungan. Bahan Ceramah BAPEDALDA Provinsi Sullawesi Selatan. 2. Benyamin, I Made, 2007. Materializing Environmentally Oriented City, makalah disampaikan pada Seminar Internasional di Medan, Proceeding, Departemen of Architecture University of Sumatera Utara, Medan. 3. Benyamin, I Made, 2008. Usaha Menghambat Kecenderungan Ibukota Jakarta Menuju Megapolost, Makalah disampaikan pada Internasional Workshop di Brastagi, Proceeding, Nusantara Urban Research Institute, Medan. 4. Clapan, Jr. W.B., 1973. Natural Ecosystem, MacMillan Publishing Co.Inc. New York. 5. Pearce W. David, & Tunner R. Kerry, 1990. Economics of Natural and The Environment, Harvester Wheatsheaf, Singapore. 6. Pearce W. David, 1976. Environmental Economics, Longman, New York. 7. Tietemberg, Tom, 1988. Environmental and natural Resource Economics, Scoot Foresman and Company, USA. 8. Bibhudatta Nayak, 2001. Economic~Ecology Values of an Indian Forest : A Case Study, ProQuest. 9. Kalsim Kusnadi Dedi, 2005. Konservasi Tanah dan Air Terpadu : Belajar dari Pengalaman pada Proyek Good Governance in Water Resources Management (GGWRM) PMU Lampung, dkalsim@yahoo.com. 10. Siebert Horst, 2008. Economics of the Environment : Theory and Policy, Seventh Edition, Springer, Italy, ProQuest.

MODULE DESCRIPTION OF TOXICOLOGY AND ENVIRONMENTAL POLLUTION

Module name	Toxicology and Environmental Pollution				
Module-level	Posgraduate				
Code	18P03211002				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Fahrudin, M.Sc				
Lecturer(s)	Dr. Ir. Muhammad Farid Samawi, M.Si Prof. Dr. Ir. Khusnul Yaqin, M.Sc				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Compulsory			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to explain the meaning of environmental pollution according to law, sources of pollution and types of pollution</p> <p>CLO-2 Able to explain the threat of pollution to natural ecosystems and threats to humans</p> <p>CLO-3 Able to describe the reverse impact of pollution on ecosystems for humans and development</p> <p>CLO-4 Able to describe the principles of toxicology and its application in environmental management.</p>				
Content	Study the types, sources and mechanisms of contamination, the impact of pollution on the air, water and soil environment as well as biota and humans				

Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion CO-4 Written test
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Clark, R.B. 1989. Marine Pollution. Clarendon Press. Oxford. London. UK. 2. Heath, A.G. 1995. Water Pollution and Fish Physiology. CRC Lewis Publisher. Boca Rota, Florida. USA. 3. Laws, E.A. 1993. Aquatic Pollution : An Introductory Text. Willey Interscience. New York, USA. 4. Lockwood, A.P.M. (editor). 1976. Effects of Pollutants on Aquatic Organisms. Society for Experimental Biology, Seminar SeriesCambridge University Press. London, UK. 5. Weis, J. S., 2015. Marine Pollution. What Everyone need to Know. Oxford University Press. Oxford. 6. White, H. 1993. Concept in Marine Pollution Measurement.

MODULE DESCRIPTION OF REMOTE SENSING AND GEOGRAPHY INFORMATION SYSTEM

Module	Remote Sensing and Geography Information System				
Module-level	Posgraduate				
Code	18P03211102				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Sumbangan Baja, M.Sc				
Lecturer(s)	Prof. Dr. Ir. Sumbangan Baja, M.Sc Prof. Dr. Nurjanna Nurdin, ST. M.Si Dr. Samsu Arif, M.Si				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Demonstration	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to explain the background of the birth of senses & GIS, the limits and scope of senses & GIS and the basic components and sub-systems of GIS;</p> <p>CLO-2 Able to design sensory and GIS application projects as well as data integration processes in environmental management.</p>				

Content	This course begins by discussing: (1) Introduction and explanation of the learning contract; continued with discussion (2) Background to the birth of senses & GIS, boundaries and space scope of senses & GIS and basic components and sub-systems of GIS; (3) Spatial data and spatial relationships and spatial data structures (models); (4) Map and system projections coordinate; (5) Concepts of electromagnetic waves, thermal sensing, spectrometry and microwave; (6) Spectral signature; (7) Remote sensing satellite system; (8) Introduction digital data processing; (9) Digital data processing, GIS & its applications; (10) Data analysis and spatial modeling; (11) Design of sensory and GIS application projects (I); and (12) Application project design senses and GIS (II) and data integration processes.
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment, Demonstration
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Burrough, P.A. 1989. Principle of Geographic Information Systems for Land Resources Assessment. Monographs on Soil and Resources Survey. No. 12. Clarendon Press. Oxford. 2. Fischer, M.M. and Nijkamp, P. (Eds). 1993. Geographic Information System, Spatial Modelling and Policy Evaluation. Springer~Verlag. Berlin. 3. Arnoff, S. 1991. Geographic Information System : A Management Perspective. WDL Publication. Ottawa. 4. Star, J. and Estes, J.E. 1990. Geographic Information System : A Introduction. Prentice Hall, Englewood Cliff. New Jersey. 5. Barret, E.C., and Curtis OBE, L.F. 1999. Introduction to Environmental Remote Sensing. 4th Edition. Stanley Thornes Ltd., Cheltenham. 6. Curran, P.J. 1985. Principles of Remote Sensing. Longman Group, London. 7. Lillesand, T.M. and R. W. Kiefer. 1987. Remote Sensing and Image Interpretation. 2nd edition. John Wiley and Sons, New York. 8. Jensen, J.R. 1986. Introductory Digital Image Processing – A Remote Sensing Perspective. Printice – Hall, Englewood Cliffs.

MODULE DESCRIPTION OF ENVIRONMENTAL QUALITY MANAGEMENT

Module	Environmental Quality Management				
Module-level	Posgraduate				
Code	18P03211202				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Budimawan, DEA				
Lecturer(s)	Prof. Dr. Ir. Budimawan, DEA Dr. Ir. Rijal Idrus, M.Sc Dr. Agus Bintara, S.Kel. M.Kes				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to explain efforts to improve the quality of the environment through technological, socio-cultural and health approaches in a sustainable manner. CLO-2 Able to make decisions on efforts to improve environmental quality in groups				
Content	Efforts to improve environmental quality through technological, socio-cultural and health approaches in a sustainable manner.				
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment, Presentation and Discussion				

Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Paolo Ricci. 2010. Environmental and Health Risk Assessment and Management: Principles and Practices. Springer. 2. Richard B. Philp. 2001. Ecosystems and human health: toxicology and environmental hazards. Lewis publ 3. T. Matsuo, K. Hanaki, S. Takizawa, H. Satoh. 2001. Advances in water and wastewater treatment technology [electronic resource]: molecular technology, nutrient removal, sludge reduction and environmental health. Isevier Science 4. R.E. Hester, R Harrison. 1997. Air Quality Management (Issues in Environmental Science and Technology). Royal Society of Chemistry 5. Frederick Coulston and Friedhelm Korte. 1974. Environmental Quality and Safety. Global Aspects of Chemistry, Toxicology and Technology as Applied to the Environment. Academic Press Inc

MODULE DESCRIPTION OF ENVIRONMENTAL POLLUTION CONTROL

Module	Environmental Pollution Control				
Module-level	Posgraduate				
Code	18P03211302				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Paulina Taba, M.Sc				
Lecturer(s)	Prof. Dr. Paulina Taba, M.Sc Dr. Mahatma, ST., M.Sc Prof. Dr. Fahrudin, M.Si				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to describe sources and types of environmental pollution CLO-2 Able to describe efforts to control environmental pollution physically, chemically and biologically CLO-3 Able to develop efforts to control environmental pollution				
Content	Describe methods of controlling environmental pollution physically, chemically and biologically in air, water and soil media				
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Presentation and Discussion CO-3 Assignment				
Media employed	LCD, a website, print out, computer, library				

Literature	<ol style="list-style-type: none">1. Peakall, D. 1992. Animal Biomarker as Pollution Indicators. Chapman & Hall. London, UK.2. Weis, J. S., 2014. Physiological, Developmental and Behavioral Effects of Marine Pollution. Springer. London.3. Calhoun, Y (Ed)., 2005. Water Pollution. Chelsea House Publishers. USA.4. GESAMP., 1984. Thermal Discharges in the Marine Environment. Report studies 24. IMO/FAO/Unesco/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Pollution.5. Farmer, A., 1997. Managing Environmental Pollution. Routledge Environmental Series. New York
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MODULE DESCRIPTION OF ENVIRONMENTAL HEALTH

Module name	Environmental Health				
Module-level	Posgraduate				
Code	18P03211402				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Anwar Daud, S. Kes. M.Kes				
Lecturer(s)	Prof. Dr. Anwar Daud, S. Kes. M.Kes Dr. Agus Bintara, S.Kel. M.Kes				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to explain and analyze the health risks of water, air, soil, noise and radiation pollution CLO-2 Able to apply research into pollution control technology, waste management in practice/case studies in the field.				

Content	This course will discuss: introduction to environmental health, aspects of health and technology control of water, air, soil, noise and radiation pollution, liquid waste treatment technology, Solid Waste, and Vector Control
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment, Presentation and Discussion
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Abbasi, S.A. & N. Rames, 2003, The Theory and Practice of Environmental Impact and Assessment, Discovery Publishing House, New Dehli. 2. Anonimus, 2002, Peraturan Pemerintah Republik Indonesia Nomor 82 Tahun 2001 Tentang Pengelolaan Kualitas Air dan Pengendalian Pencemaran Air, Bapedal, Jakarta. 3. Anonimus, 2021, Keputusan Menteri Negara Lingkungan Hidup Nomor : 22 Tahun 2021, Tentang Pedoman Penentuan Status Mutu Air Menteri Negara Lingkungan Hidup, Kantor Menteri Lingkungan Hidup, Jakarta. 4. Anonim, 2009, Undang-Undang No.32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup, 5. Alexander, Richard, 2005, Environmental Pollution and Property Damage:Overcoming the Permanent Nuisance Three Year Statute of Limitations – Anatomy of a \$2,000,000 Property Damage Settlement, Part I, Akses Oktober 2005. 6. ASAEC,2001, Methodology For Developing Environmental Quality Requirements For A Cost Analysis Requirements Escription (Card) Prepared By The Us Army Environmental Center. 7. AQMN, 2003, Air Quality In Hong Kong, Air Services Group .Environmental Protection Department .The Government of the Hong Kong Special Administrative Region. 8. Bergkvist, Petra and Nicholas Jarvis, 2004, 2004,Modeling Organic Carbon Dynamics and Cadmium Fate in Long-Term Sludge Amended Soil, Published in Journals Environmental Quality, 33:181-191.

MODULE DESCRIPTION OF MARITIME ANTHROPOLOGY

Module name	Maritime Anthropology				
Module-level	Postgraduate				
Code	18P03211502				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Hamka Naping, M.A				
Lecturer(s)	Prof. Dr. Hamka Naping, M.A Prof. Dr. Munsu Lampe, M.A Prof. Dr. Ir. Eymal B. Demmalino, M.A				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to explain cultural systems, attitudes, activities and human social life in a maritime area. CLO-2 Able to describe the condition of the maritime community and its activities globally.				
Content	Assess or study cultural systems, attitudes, as well as human activities and social life in a maritime area. Get to know the maritime community and its activities				
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment, Presentation and Discussion				

Media employed	LCD, a website, print out, library
Literature	<ol style="list-style-type: none"> <li data-bbox="516 233 1459 338">1. Ricardo Borrero , Antonio Jaramillo Arango , Filipe Castro , Nicolás Lira , Rodrigo de Oliveira Torres. 2022. Traditional Shipbuilding Communities: An Urgent and Neglected Research Topic in Maritime Anthropology <li data-bbox="516 338 1459 407">2. Thomas Hylland Eriksen, Finn Sivert Nielsen . 2001. A History of Anthropology. Pluto Press <li data-bbox="516 407 1459 512">3. Todd J. Braje . 2009. Modern Oceans, Ancient Sites : Archaeology and Marine Conservation on San Miguel Island, California. University of Utah Press. <li data-bbox="516 512 1459 602">4. Justin Armstrong. 2022. Anthropology, Islands, and the Search for Meaning in the Anthropocene. Routledge

MODULE DESCRIPTION OF LAND USE PLANNING

Module	Land Use Planning				
Module-level	Posgraduate				
Code	18P03211602				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Hazairin Zubair, M.Si				
Lecturer(s)	Prof. Dr. Ir. Hazairin Zubair, M.Si Andang Suryana Soma, P.hD				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to explain the meaning and factors that influence land use, what is land use, CLO-2 Able to describe what aspects need to be considered in providing land and land use assessments is useful for developing the potential of an area				
Content	Explain the meaning and factors that influence land use, what land use is, what aspects need to be considered in providing a land assessment. land use is useful for developing the potential of an area				
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment, Presentation and Discussion				

Media employed	LCD, a website, computer, library
Literature	<ol style="list-style-type: none"> 1. John Bergstrom. 2004. Land Use Problems and Conflicts (Routledge Research in Environmental Economics). Routledge. 2. Solon Barraclough, Krishna B. Ghimire. 2000. Agricultural Expansion and Tropical Deforestation: International Trade, Poverty and Land Use. 3. Eric Koomen, John Stillwell, Aldrik Bakema, Henk J. Scholten. 2007 Modelling Land-Use Change: Progress and Applications (GeoJournal Library). Springer 4. Stallworthy . 2002. Sustainability Land Use and the Environment. Cavendishpublishing. 5. Carys E. Jones . 2005. Strategic environmental assessment and land use planning: an international evaluation. Earthscan

MODULE DESCRIPTION OF WATERSHED MANAGEMENT

Module	Watershed Management				
Module-level	Posgraduate				
Code	18P03211702				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Hazairin Zubair, M.Si				
Lecturer(s)	Prof. Dr. Ir. Hazairin Zubair, M.Si Andang Suryana Soma, S.Hut. M.Si., P.hD				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to explain the meaning and function of watershed, watershed management objectives, watershed management stages, types of watershed CLO-2 Able to analyze the relationship between watershed management and sustainable development				
Content	Definition and function of watershed, purpose of watershed management, stages of watershed management, types of watersheds				
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment, Presentation and Discussion				

Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none">1. Rattan Lal.1999. Integrated Watershed Management in the Global Ecosystem.2. Thomas E. Davenport . 2002. The Watershed Project Management Guide. CRC Press3. H. Gregersen, P. Ffolliott, K. Brookes. 2007. Integrated Watershed Management: Connecting People to their Land and Water. CABI4. Northcote and Hartman 2004. Fishes and Forestry: Worldwide Watershed Interactions and Management. Wiley-Blackwell

MODULE DESCRIPTION OF ENVIRONMENTAL MODELLING

Module	Environmental Modelling				
Module-level	Posgraduate				
Code	18P03211802				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Hazairin Zubair, M.Si				
Lecturer(s)	Prof. Dr. Ir. Hazairin Zubair, M.Si Prof. Dr. Jeffry Kusuma, M.Sc Dr. Ir. Muhammad Farid Samawi, M.Si				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Demonstration	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to explain the meaning and scope of system and environmental modeling CLO-2 Able to analyze an environmental system CLO-3 Able to make environmental modeling for decision making				
Content	Systems approach, system models and analysis, system modeling, system modeling stages, system modeling simulation and validation, use of software applications in environmental system modeling				
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment, Presentation and Discussion CO-3 Demonstration model				

Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Eriyatno 1999. Ilmu Sistem. IPB Press, Bogor 2. Muhammadi, E. Aminullah dan B. Soesilo. 2001. Analisis Sistem Dinamis. UMJ Press. Jakarta. 3. Jonathan B. Snape, Irving J. Dunn, John Ingham, Jiri E. Prenosil. 1995. Dynamics of Environmental Bioprocesses: Modelling and Simulation. Wiley-VCH 4. Pierre Legendre and Louis Legendre. 1998. Numerical Ecology. Elsevier 5. James S. Clark, Alan Gelfand. 2006. Hierarchical Modelling for the Environmental Sciences: Statistical Methods and Applications. Oxford University Press 6. F.M. Brouwer . 1987. Integrated Environmental Modelling: Design and Tools. Springer. 7. Torsten Söderström (auth.), Liuping Wang, Hugues Garnier (eds.). 2012. System Identification, Environmental Modelling, and Control System Design. Springer-Verlag London

MODULE DESCRIPTION OF SUSTAINABLE DEVELOPMENT INSIGHTS

Module	Sustainable Development Insights				
Module-level	Postgraduate				
Code	18P03211902				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Ambo Tuwo, DEA				
Lecturer(s)	Prof. Dr. Ir. Ambo Tuwo, DEA Prof. Dr. Ir. Sharifuddin Bin Andy Omar, M.Sc				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Elective			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	2	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to explain the problems of sustainable development which includes insights and concepts of sustainable development.</p> <p>CLO-2 Able to describe ecological problems, developmental ecological problems, population ecological problems, tourism ecological problems, food ecology problems, energy resources and development problems, and critical environmental problems</p>				

Content	This course teaches students the insights and problems of sustainable development which include insights and concepts of sustainable development, development and the environment, ecological problems, development ecology problems, population ecology problems, tourism ecology problems, food ecology problems, energy resources and development problems, and critical environmental problems
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Written test CO-2 Assignment CO-3 Presentation and Discussion CO-4 Written test
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Edwards, C. A. and D. Pimental. 2002. The future of human populations: Energy, food, and water availability in the twenty-first century. In: Just ecological integrity, pp. 119-39. 2. Ryszkowski, L. 2002. Integrity and sustainability of natural and man-made ecosystems. In: Just ecological integrity, pp. 155-66. 3. Miller, P. and L. Westra. 2002. Just ecological integrity: The ethics of maintaining planetary life. London: Rowman & Littlefield, pp. xi-52. 4. Wackernagel, M. and W. Rees. 1996. Our ecological footprint: Reducing human impact on the earth. Philadelphia: New Society Publishers, pp. 1-60. 5. Elliot, J. 2001. An introduction to sustainable development. London: Routledge. 6. Miller, P. and L. Westra. 2002. Just ecological integrity: The ethics of maintaining planetary life. London: Rowman and Littlefield. 7. Wackernagel, M. and W. Rees. 1996. Our ecological footprint: Reducing human impact on the Earth. Philadelphia: New Society 8. Cech, T. 2002, Principles of water resources: History, development management and policy. Wiley, UK, (ISBN 0471438618), pp 445.

MODULE DESCRIPTION OF MARITIME SOCIOLOGY

Module	Maritime Sociology				
Module-level	Postgraduate				
Code	18P03212002				
Semester(s) in which the module is taught	Semester I				
The person responsible for the module	Prof. Dr. Ir. Eymal B. Demmalino, M.Si				
Lecturer(s)	Prof. Dr. Ir. Eymal B. Demmalino, M.Si Prof. Dr. Ir. Sitti Bulqis, M.Si Dr. Tasrifin Thahara, M.Si				
Language	Indonesian				
Relation to curriculum	Program		Mode	Semester	
	MSc. Environmental Science		Compulsory	Odd	
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.4	25		
	Presentation and discussion	1	25		
Workload	Contact Hours per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2.4	2	1	90.6 h	3.4
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	CLO-1 Able to master and develop maritime sociology theory, increase learning capacity, and apply it in solving management problems environment,				

Content	This course schedules a number of discussion materials: (1) Philosophy, Scope & Importance of Learning Maritime Sociology in Environmental Management, (2) Various Maritime Sociological Perspectives, (3) Structural Functional Perspectives in Maritime Sociology, (4) Interpretive Perspectives Symbolic Interactionism in Maritime Sociology, (5) Social Exchange Perspective in Maritime Sociology, (6) Externalization, Objectivation & Internationalization Perspectives in Maritime Sociology, and (7) Reconciliation between Perspectives in Maritime Sociology.
Study and examination requirements and forms of examination	Face to face lectures: 2 x 50 minutes per week CO-1 Assignment, Presentation and Discussion
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Demmallino, Eymal B, dkk, 2018. Siratal Mustaqim : Kajian dan Gagasan Transformasi Peradaban Kemaritiman di Negeri Bugis Makassar Sulawesi Selatan. CV. Inzani. Makassar. 2. Ritzer, George. 2012. Teori Sosiologi : Dari Sosiologi Klasik sampai Perkembangan Terakhir Postmodern. Pustaka Pelajar. Yogyakarta. 3. Tunner, Bryan S. 2012. Teori Sosiologi : Dari Klasik Sampai Postmodern. Pustaka Pelajar. Yogyakarta.

MODULE DESCRIPTION OF RESEARCH METHODS AND SCIENTIFIC PUBLICATIONS

Module	Research Methods and Scientific Publications				
Module-level	Posgraduate				
Code	18P03222103				
Semester(s) in which the module is taught	Semester II				
The person responsible for the module	Prof. Dr. Ir. Didi Rukmana, M.Sc				
Lecturer(s)	Prof. Dr. Ir. Didi Rukmana, M.Sc Prof. Dr. Ir. Eymal B. Demmalino, M.Si Andi Dirpan, STP, M.Si. P.hD				
Language	Indonesian				
Relation to curriculum	Program	Mode			Semester
	MSc. Environmental Science	Compulsory			Odd
Teaching Methods	Teaching Method	Contact Hours per week	Class Size		
	Lecture	1.8	25		
	Presentation and discussion	1	25		
Workload	Contact per week	Private study per week	Assignment	Semester Workload	ECTS Credits
	2	3	3	136 h	5.1
Requirements according to the examination regulations	To pass the module, students must attend 80% of lectures and obtain a minimum final grade of C (> 50). This value is a value based on the weight of the material according to the Semester Learning Plan of the course from 3 lecturers (Exam + assignment + Presentation and discussion)				
Module objectives/intended learning outcomes	<p>CLO-1 Able to master, develop and apply techniques in research methods both in the quantitative tradition, qualitative tradition.</p> <p>CLO-2 Able to scientific publications in an effort to discover and solving environmental management problems in a holistic (systemic and integrated) especially in the Wallacea region (Sulawesi, NTT, Maluku and Papua).</p>				

Content	This course schedules a number of materials for discussion: (1) Quantitative Tradition in the form of: Determining Research Topics and Problems, Hypothetical Determination, Determining Research Variables, Data Validity and Reliability, Sampling Techniques, Data Processing and Analysis, and Hypothetical Testing; (2) Qualitative Tradition: Narrative Studies, Case Studies, Ethnographic Studies, Phenomenological Studies, and Grounded Theory; and (3) Scientific Publications: Preparation of Article Manuscripts, Plagiarism, and Techniques for Selecting Journals.
Study and examination requirements and forms of examination	Face to face lectures: 3 x 50 minutes per week CO-1 Written test CO-2 Assignment, Presentation and Discussion
Media employed	LCD, a website, print out, computer, library
Literature	<ol style="list-style-type: none"> 1. Creswell, 1998. Qualitative Inquiry and Research Design. Choosing Among Five Traditions. London : SAGE Publication, Inc. 2. Kaelan. 2005. Metode Penelitian Kualitatif Bidang Filsafat : Paradigma Bagi Pengembangan Penelitian 3. Interdisipliner Bidang Filsafat, Budaya, Sosial, Semiotika, Sastra, Hukum dan Seni. Yogyakarta : Paradigma. 4. Miles, M.B., dan A.M. Huberman. 1992. Analisis Data Kualitatif. Jakarta : Indonesia University Press. 5. Moleong, Lexy J. 1991. Metodologi Penelitian Kualitatif. Edisi Revisi. Bandung : Remaja Rosdakarya. 6. Myrdal, Gunnar. 1981 Objektivitas Penelitian Sosial. Jakarta : LP3ES. 7. Suryana. 2010. Metodologi Penelitian : Model Praktis Penelitian Kuantitatif dan Kualitatif. Jakarta : Universitas Pendidikan Indonesia.