DOCUMENT OF

MODULE HANDBOOK

ENVIRONMENTAL STUDY PROGRAM

1st Semester

No.	Course Code	Course	Year	Semester	Credit	ECTS
Fundamental Courses						
1.	IPSAL61301	Statistical analysis	1	1	3(2-1)	4.8
Compulsory Courses						
2.	IPSAL 61202	Environmental Science	1	1	3(2-1)	4.8
3.	IPSAL 61303	Management of Natural Resources and Environment	1	1	3(2-1)	4.8
4.	IPSAL 61304	Management of Coastal Areas, Sea and Small Islands	1	1	3(2-1)	4.8

MODULE HANDBOOK

Module designation	Statistical Analysis
Semester(s) in which the module is taught	1 / first year
Person responsible for the module	Prof. Ir. Fredrik L Benu. M.Si.,Ph.D
Lecturer	Prof. Ir. Fredrik L Benu. M.Si.,Ph.D Dr. Ir. Johanna Suek, M.Si.
Language	Indonesian
Relation to curriculum	Fundamental Courses
Teaching methods	Lecture, discussion, project-based learning
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 1. Academic activities in the laboratory(literature study) 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 2. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8. ECTS

Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-1: Able to communicate complex environmental issues and research findings to a wide range of audiences, including policy makers, scientists, and the public. PLO-8: have the necessary skills to manage data, convey information in the field of Environmental Science, and provide alternative solutions when needed PLO-11: Able to analyze and evaluate environmental problems and develop creative solutions to overcome such problems. Course Learning Outcomes (CLO): CLO-1: Able to Apply a variety of statistical techniques commonly used in environmental research. CLO-2: Able to Design and implement strategies for collecting environmental data CLO-3: Able to Utilize statistical software (e.g., R, Python, SPSS) to perform data analysis. CLO-4: Able to multivariate statistical methods to analyze complex environmental datasets. CLO-5: Apply critical thinking skills to assess and solve environmental problems using statistical approaches.
Content	The Statistical Analysis course in a master's program in Environmental Science may cover several topics relevant to the use of statistical methods in the context of environmental science, such a course: 1. Introduction to Statistics 2. Data Description and Presentation 3. Statistical Inference Data Description and Presentation 4. Regression and Correlation 5. Analysis of Variance (ANOVA) 6. Multivariate Data Analysis 7. Spatial Analysis: 8. Time Series Analysis 9. Sampling Methods and Experimental Design 10. Use of Statistical Software 11. Application of Statistics in Environmental Research 12. Ethics in Statistical Use
Examination forms	Assessment covers written tests (midterm examination, semester final exams, practicum exams, quiz), assignments, project results, participatory activities
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 50% (including 10% quiz, 10% assignment, 15% mid-test and 15% final test) and 50% project (25% participatory activity and 25% project results). Students pass competence if they get a minimum point is 70.

Reading List	1. Heumann, C., & Shalabh, M. S. (2016). *Introduction to statistics and data analysis*. Springer International Publishing Switzerland 2. Peck, R., Short, T., & Olsen, C. (2020). *Introduction to statistics and data analysis*. Cengage Learning. 3. Ali, Z., Bhaskar, S. B., & Sudheesh, K. (2019). Descriptive statistics: Measures of central tendency, dispersion, correlation and regression. *Airway*, *2*(3), 120-125. 4. Marshall, G., & Jonker, L. (2010). An introduction to descriptive statistics: A review and practical guide. *Radiography*, *16*(4), e1-e7. 5. Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied multiple regression/correlation analysis for the behavioral sciences*. Routledge. 6. Kohn, K. (2018). Using logistic regression to examine multiple factors related to e-book use. *Library Resources & Technical Services*, *62*(2), 54. 7. Plant, R. E. (2018). *Spatial data analysis in ecology and agriculture using R*. cRc Press. 8. Murtagh, F., & Heck, A. (2012). *Multivariate data analysis* (Vol. 131). Springer Science & Business Media. 9. Reimann, C., Filzmoser, P., Garrett, R., & Dutter, R. (2011). *Statistical data analysis explained: applied environmental statistics with R*. John Wiley & Sons. 10. Utts, J. (2021). Enhancing data science ethics through statistical education and practice. *International Statistical Review*, *89*(1), 1-17. 11. Gholamrezaie, H., Hasanlou, M., Amani, M., & Mirmazloumi, S. M. (2022). Automatic mapping of burned areas using Landsat 8 time-series images in Google Earth engine: A case study from Iran. *Remote Sensing*, *14*(24), 6376. 12. Yang, Y., Wu, T., Wang, S., Li, J., & Muhanmmad, F. (2019). The NDVI-CV Method for mapping evergreen trees in complex urban areas using reconstructed landsat 8 time-series data. *Forests*, *10*(2), 139.

MODULE HANDBOOK

Module designation	Enviromental Science
Semester(s) in which the module is taught	1 / first year
Person responsible for the module	Prof. Philiphi de Rozari, S.Si., M.Si., M.Sc.,Ph.D
Lecturer	1. Prof. Philiphi de Rozari, S.Si., M.Si., M.Sc.,Ph.D 2. Ir. Wayan Mudita, M.Sc., Ph.D
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	1. Small Group Discussion 2. Role-Play and Simulation 3. Team Base Project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 Credit x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 Credit x 60 Minutes x 14 Meetings = 1,680 minutes

	3. Self Study 2 Credit x 60 Minutes x 14 Meetings = 1,680 minutes Practicum (1 credit) 1. Academic activities in the laboratory(literature study) 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 2. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-1: Able to communicate complex environmental issues and research findings to a wide range of audiences, including policy makers, scientists, and the public PLO-3: Able to understand in depth the physical, chemical, and biological systems that support the environment. This includes knowledge of ecosystem dynamics, climate change, pollution, and natural resource management. PLO-5: Able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-11**:** Able to analyze and evaluate environmental problems and develop creative solutions to overcome such problems. Course Learning Outcomes (CLO): CLO-1: Able to Analyze complex environmental issues critically and propose innovative solutions based on evidence and scientific reasoning. CLO-2: Able to Evaluate and interpret environmental policies, regulations, and legal frameworks, and understand their implications for sustainable practices. CLO-3 : Able to Develop strategies for the sustainable management of natural resources, considering ecological, economic, and social factors. CLO-4: able to Evaluate and promote sustainable development practices, considering the balance between environmental conservation and human needs. CLO-5: able to Evaluate ecosystem services and their role in human well-being, and incorporate this understanding into environmental management strategies.
Content	1. Fundamentals of Environmental Science 2. Environmental Policy 3. Natural Resource Conservation 4. Climate Change(Adaptation and Mitigation) 5. Environmental Technology 6. Hydrology and Water Quality 7. Waste Management Techniques 8. Environmental Ecosystem Services Evaluation and Risk Assessment 9. Environmental Impact Assessment (EIA) 10. Environmental Education and Communication 11. Environmental Ethic and Professional Ethics and Integrity

Examination forms	Assessment covers written tests (middle exams and semester final exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using a value of 25% soft skill, 15% assignment, 30% mid -test and 30% final test. Students pass competence if they get a minimum point 70
Reading List	1. Rana, S. V. S. (2013). *Essentials of ecology and environmental science*. PHI Learning Pvt. Ltd. 2. Chuvieco, E. (2020). *Fundamentals of satellite remote sensing: An environmental approach*. CRC press. 3. Richter, P. M., Runkel, M., & Schmidt, R. C. (2021). Strategic environmental policy and the mobility of firms. *Journal of the Association of Environmental and Resource Economists*, *8*(5), 863-893. 4. Wolde-Rufael, Y., & Weldemeskel, E. M. (2020). Environmental policy stringency, renewable energy consumption and CO2 emissions: Panel cointegration analysis for BRIICTS countries. *International Journal of Green Energy*, *17*(10), 568-582. 5. Lu, C., & Wang, K. (2023). Natural resource conservation outpaces and climate change: Roles of reforestation, mineral extraction, and natural resources depletion. *Resources Policy*, *86*, 104159. 6. Yan, J., & Haroon, M. (2023). Financing efficiency in natural resource markets mobilizing private and public capital for a green recovery. *Resources Policy*, *85*, 103841. 7. Council, C. C. A., & House, M. (2023). Submitted to the Minister for the Environment, Climate and Communications on 21 July 2023. 8. Bui, L. T., & Pham, H. T. H. (2023). Linking hydrological, hydraulic and water quality models for river water environmental capacity assessment. *Science of The Total Environment*, *857*, 159490. 9. Meraj, G., Singh, S. K., Kanga, S., & Islam, M. N. (2022). Modeling on comparison of ecosystem services concepts, tools, methods and their ecological-economic implications: A review. *Modeling Earth Systems and Environment*, *8*(1), 15-34. 10. Wang, Z., Li, X., Mao, Y., Li, L., Wang, X., & Lin, Q. (2022). Dynamic simulation of land use change and assessment of carbon storage based on climate change scenarios at the city level: A case study of Bortala, China. *Ecological Indicators*, *134*, 108499. 11. Zhao, Y., Li, X., Mo, H., Zhan, L., Yao, Y., Li, Y., & Li, H. (2023). How does the environmental impact assessment (EIA) process affect environmental performance? Unveiling EIA effectiveness in China: A practical application within the thermal power industry. *Environmental Impact Assessment Review*, *101*, 107120. 12. Al Halbusi, H., Tang, T. L. P., Williams, K. A., & Ramayah, T. (2022). Do ethical leaders enhance employee ethical behaviors? Organizational justice and ethical climate as dual mediators and leader moral attentiveness as a moderator--Evidence from Iraq's emerging market. *Asian Journal of Business Ethics*, *11*(1), 105-135.

MODULE HANDBOOK

Module designation	Management of Natural Resources and Environment
Semester(s) in which the module is taught	1 / First year
Person responsible for the module	Dr. Ir. Ida Nurwiyana, M.Si
Lecturer	1. Dr. Ir. Ida Nurwiyana, M.Si 2. Dr. Ir. Agus A. Nalle, M.Si
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	1. Small Group Discussion 2. Role-Play and Simulation 3. Self-Directed Learning 4. Team Base Project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 3. Academic activities in the laboratory(literature study and fieldtrip) 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 4. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3CU =4.8 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-3: Graduates are expected to understand in depth the physical, chemical, and biological systems that support the environment. This includes knowledge of ecosystem dynamics, climate change, pollution, and natural resource management. PLO-5: Graduates should have be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders PLO-10: Graduates able to develop and implement environmental policies and strategies that address complex environmental challenges and promote sustainable developmen PLO-11: Graduates able to analyze and evaluate environmental problems and develop creative solutions to overcome such problems. ourse Learning Outcomes (CLO): CLO-1: Able to Conduct comprehensive assessments of natural resources, including land, water, minerals, and biodiversity. CLO-2: Able to Develop strategies for the sustainable management of natural resources, considering ecological, economic, and social factors.posters CLO:3: able to formulate and implement conservation plans to preserve biodiversity, considering the ecological importance of diverse species. CLO-4: Able to Evaluate and implement sustainable water resource management practices, including watershed management and

	water quality protection. CLO-5: Able to Develop sustainable forest management plans, considering timber extraction, wildlife habitat, and ecosystem health. CLO-6: Able to Evaluate and implement sustainable practices for the management of energy resources, considering renewable energy options.
Content	1. Natural Resource Assessment 2. Sustainable Resource Management 3. Land use Planning and Water Resource Management 4. Forest Resource Management 5. Energy Resource Management 6. Community Engagement 7. Policy Analysis 8. Climate Resilience Planning 9. Remote Sensing and GIS Application 10. Economic Valuation of Natural Resources
Examination forms	Assessment covers written tests (middle exams and semester final exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using a value of 25% soft skill, 15% assignment, 30% mid -test and 30% final test. Students pass competence if they get a minimum point 70.
Reading List	1. Jiang, Q., Rahman, Z. U., Zhang, X., Guo, Z., & Xie, Q. (2022). An assessment of the impact of natural resources, energy, institutional quality, and financial development on CO2 emissions: Evidence from the B&R nations. *Resources Policy*, *76*, 102716. 2. Zhang, J., & Dong, Z. (2022). Assessment of coupling coordination degree and water resources carrying capacity of Hebei Province (China) based on WRESP2D2P framework and GTWR approach. *Sustainable Cities and Society*, *82*, 103862. 3. Liu, Y., Khan, A. J., Iqbal, J., Hameed, W. U., & Ahmed, T. (2023). Strategic management of natural resources through human, technological, and institutional resources: Sustainable curing the resource curse. *Resources Policy*, *86*, 104233. 4. Olabiwonnu, F. O., Bakken, T. H., & Anthony Jr, B. (2022). Achieving sustainable low flow using hydropower reservoir for ecological water management in Glomma River Norway. *Sustainable Water Resources Management*, *8*(2), 53. 5. Begum, F., de Bruyn, L. L., Kristiansen, P., & Islam, M. A. (2022). Forest co-management in the Sundarban mangrove forest: Impacts of women's participation on their livelihoods and sustainable forest resource conservation. *Environmental Development*, *43*, 100731. 6. Suparyana, P. K., Sukardi, L., Yakin, A., & Sa'diyah, H. (2022, December). The potential of forest resource management at farmer groups in the Rarung forest area. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1107, No. 1, p. 012028). IOP Publishing. 7. Bonye, S. Z., Yiridomoh, G. Y., & Nsiah, V. (2023). Multi-stakeholder actors in resource management in Ghana: Dynamics of community-state collaboration in resource use management of the Mole National Park, Larabanga. *Forest Policy and Economics*, *154*, 103036. 8. Rentschler, A., & Williams, K. C. (2022). Community engagement and the importance of partnerships within the Great Lakes Areas of Concern program: A mixed-methods case study. *Journal of Great Lakes Research*, *48*(6), 1473-1484. 9. Quayson, M., Bai, C., Mahmoudi, A., Hu, W., Chen, W., & Omoruyi, O. (2023). Designing a decision support tool for integrating

ESG into the natural resource extraction industry for sustainable development using the ordinal priority approach. *Resources Policy*, *85*, 103988.

10. Islomov, S., Aslanov, I., Shamuratova, G., Jumanov, A., Allanazarov, K., Daljanov, Q., ... & Karimbaev, Q. (2022, May). Monitoring of Land and Forest Cover Change Dynamics Using Remote Sensing and GIS in Mountains and Foothill of Zaamin, Uzbekistan. In *International Scientific Conference on Agricultural Machinery Industry "Interagromash""* (pp. 1908-1914). Cham: Springer International Publishing.

MODULE HANDBOOK

Module designation	Management of Coastal Areas, Sea and Small Islands
Semester(s) in which the module is taught	1 / first year
Person responsible for the module	Dr. Chaterina A. Paulus, S.Pi, M.Si
Lecturer	1. Dr. Chaterina A. Paulus, S.Pi, M.Si 2. Dr. Ir. Yahya, M.Si
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	Lectures, discussions, group presentation, Team base project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 1. Academic activities in the laboratory (field trip) 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 2. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-3: Graduates are expected Able to understand in depth the physical, chemical, and biological systems that support the environment. This includes knowledge of ecosystem dynamics, climate change, pollution, and natural resource management. PLO-5 : Graduates able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-7 : Able to work independently and as part of a team, collaborating with others to achieve common goals PLO-9: Graduates should be able to Able to design and implement environmental research projects, collect and analyze data, and interpret results to make evidence-based decisions Course Learning Outcomes (CLO): CLO-1: Able to Demonstrate a comprehensive understanding of coastal and marine ecosystems, including the interconnections between terrestrial and marine environments. CLO-2: Analyze the unique environmental dynamics and challenges associated with small islands, considering their vulnerability and resilience. CLO-3: Formulate and implement strategies for the conservation of coastal and marine biodiversity, taking into account the ecological importance of various coastal and marine species,evaluating the sustainable use and potential threats to

	these ecosystems. CLO-4:Develop plans and strategies to enhance the resilience of coastal areas against natural disasters and climate change impacts.
Content	1. Understanding Coastal and Marine Ecosystem 2. Dynamics of Small Islands 3. Coastal and Marine Resource Assessment 4. Integrated Coastal Zone Management (ICZM) 5. Climate Change Impacts on Coastal Areas 6. Coastal Infrastructure Planning 7. Community Engagement in Coastal Management 8. Marine Pollution Control 9. Tourism Management in Coastal Areas 10. Coastal Resilience Planning 11. Collaboration and Networking 12. Ethical Considerations in Coastal Management

Examination forms	Assessment covering written tests (midterm exams, final semester exams, practicum exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 50% (including 10% quiz, 10% assignment, 15% mid-test and 15% final test) and 50% project (25% participatory activity and 25% project results). Students pass competence if they get a minimum point is 70.
Reading List	1. McClure, M., Sabine, C., Feely, R., Hammond, S., Meinig, C., McPhaden, M., ... & Bernard, E. (2023). The History and Evolution of PMEL: Purposeful Research that Impacts Environmental Policy. 2. Islam, S. N., Reinstädtler, S., Reza, M. S., Afroze, S., & Azad, A. K. (2023). Climate change versus livelihoods, heritage and ecosystems in small Island states of the Pacific: a case study on Tuvalu. *Environment, Development and Sustainability*, *25*(8), 7669-7712. 3. Scandurra, G., Romano, A. A., Ronghi, M., & Carfora, A. (2018). On the vulnerability of Small Island Developing States: A dynamic analysis. *Ecological Indicators*, *84*, 382-392. 4. Leal Filho, W., Krishnapillai, M., Sidsaph, H., Nagy, G. J., Luetz, J. M., Dyer, J., ... & Azadi, H. (2021). Climate change adaptation on small island states: An assessment of limits and constraints. *Journal of Marine Science and Engineering*, *9*(6), 602. 5. Ratter, B. M., & Ratter, B. M. (2018). Island vulnerability and resilience. *Geography of small islands: Outposts of globalisation*, 173-199. 6. Konovalov, A., Baturova, G., Gavrilenko, T., & Grigorenko, O. (2019). Integrated ecosystems management of the coastal zones in the Artic zone of the Russian Federation: problems and solutions. In *E3S Web of Conferences* (Vol. 120, p. 03001). EDP Sciences. 7. Sardelin, A. (2020). *Integrated coastal zone management in Republic of Croatia with a reference to Marina Vrsar* (Doctoral dissertation, University of Rijeka. Faculty of Maritime Studies, Rijeka. Department of Logistics and Management). 8. Thorne, S. L., Kovacs, D. C., Gailani, J. Z., Suedel, b. c., & Engineer research and development center vicksburg msdecision partners, incengineer research and development center vicksburg ms. (2022). *Informing the Community Engagement Framework for Natural and Nature-based Projects: An Annotated Review of Leading Stakeholder and Community Engagement Practices* (p. 109). US Army Engineer Research and Development Center, Coastal and Hydraulics Laboratory and Environmental Laboratory. 9. Lubchenco, J., & Haugan, P. M. (2023). Coastal Development: Resilience, Restoration and Infrastructure Requirements. In *The Blue Compendium: From Knowledge to Action for a Sustainable Ocean Economy* (pp. 213-277). Cham: Springer International Publishing. 10. Johnson, F. I., Laing, R., Bjeirmi, B., & Leon, M. (2023). The impacts of multi-stakeholders collaboration on management and mitigation of oil pipeline disasters in Nigeria. *AIMS environmental science*, *10*(1), 93-124. 11. Amone-Mabuto, M., Mubai, M., Bandeira, S., Shalli, M. S., Adams, J. B., Lugendo, B. R., & Hollander, J. (2023). Coastal community's perceptions on the role of seagrass ecosystems for coastal protection and implications for management. *Ocean & Coastal Management*, *244*, 106811.

2nd Semester

No.	Course Code	Course	Year	Semester	Credit	ECTS
Fundamental Courses						
1.	IPSAL 62305	Research Methodology	1	2	3(2-1)	4.8
Compulsory Courses						
2.	IPSAL 62206	Environmental Population and Development	1	2	3(3-0)	4.8
3.	IPSAL 62207	Human Ecology	1	2	3(2-1)	4.8
4.	IPSAL 62210	Environmental administration planning	1	2	3(3-0)	4.8
Elective Courses [one elective course from four specializations of the study program]						
5.	IPSAL 62208	Principles of Environmental Degradation and Pollution	1	2	3(2-1))	4.8

MODULE HANDBOOK

Module designation	Research Methodology
Semester(s) in which the module is taught	2 / first year
Person responsible for the module	Prof. Ir. Fredrik L. Benu, M.Si,Ph.D
Lecturer	1. Prof. Ir. Fredrik L. Benu, M.Si,Ph.D 2. Ir. I. Wayan Mudita, M.Sc.,Ph.D
Language	Indonesian
Relation to curriculum	Fundamental Course
Teaching methods	1. Small Group Discussion 2. Role-Play and Simulation 3. Team Base Project

Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 1. Academic activities in the laboratory (field trip) 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 2. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-1: Graduates are expected able to communicate complex environmental issues and research findings to a wide range of audiences, including policy makers, scientists, and the public. PLO-2: Graduates should have an Able to comply with ethical and professional standards in their research and practice, and able to identify and address ethical dilemmas that may arise in their work PLO-9 : Graduates are expected able to design and implement environmental research projects, collect and analyze data, and interpret results to make evidence-based decisions Course Learning Outcomes (CLO): CLO-1: Demonstrate a solid understanding of the foundational principles and concepts of research in environmental studies. CLO-2:Able to Demonstrate knowledge and adherence to ethical considerations and guidelines in environmental research, including obtaining necessary approvals. CLO-3: Apply qualitative research methods, such as interviews, focus groups, or content analysis, to explore and analyze environmental issues and critically evaluate and appraise existing environmental research studies, identifying strengths, limitations, and areas for improvement. CLO-4: Synthesize research findings and contribute to the development of new knowledge or practical solutions in the field of environmental studies.
Content	1. Research Fundamentals 2. Research Design and Planning, literature review 3. Research Ethic 4. Quantitative and Qualitative Research Methods 5. Mixed-Methods Research 6. Critical Evaluation of Research 7. Research Project Management 8. Research Reporting and Communication 9. Applied Research Skills 10. Interdisciplinary Research Integration 11. Synthesis of Research Findings

Examination forms	Assessment covers written tests (middle exams and semester final exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using a value of 25% soft skill, 15% assignment, 30% mid -test and 30% final test. Students pass competence if they get a minimum point 70.
Reading List	1. Milton, A., & Rodgers, P. (2023). *Research methods for product design*. Hachette UK. 2. Pawar, P. B., Verma, R., Daniel, C. O., & Sayyad, L. (2023). *Foundation of Research Methodology: A Comprehensive Guide*. Red Unicorn Publication. 3. Jahani, H., Jain, R., & Ivanov, D. (2023). Data science and big data analytics: A systematic review of methodologies used in the supply chain and logistics research. *Annals of Operations Research*, 1-58. 4. Zhao, D., Cai, J., Xu, Y., Liu, Y., & Yao, M. (2023). Carbon sinks in urban public green spaces under carbon neutrality: A bibliometric analysis and systematic literature review. *Urban Forestry & Urban Greening*, 128037. 5. Drolet, M. J., Rose-Derouin, E., Leblanc, J. C., Ruest, M., & Williams-Jones, B. (2023). Ethical Issues in research: perceptions of researchers, research ethics board members and research ethics experts. *Journal of Academic Ethics*, *21*(2), 269-292. 6. Dahler-Larsen, P. (2023). The practical utility of mixed methods: An empirical study. *Journal of Mixed Methods Research*, *17*(2), 187-208. 7. Phung, Q., Erdogan, B., & Nielsen, Y. (2023). Project management for sustainable buildings: a comprehensive insight into the relationship to project success. *Engineering, Construction and Architectural Management*, *30*(7), 2862-2878. 8. Habidin, N. F., Ong, S. Y. Y., Fuzi, N. M., Muhamad, U. A., & Chik, T. W. T. Interdisciplinary Research In Education, Technology And Social Science. 9. Ryan, M., Isakhanyan, G., & Tekinerdogan, B. (2023). An interdisciplinary approach to artificial intelligence in agriculture. *NJAS: Impact in Agricultural and Life Sciences*, *95*(1), 2168568. 10. Halpern, B. S., Boettiger, C., Dietze, M. C., Gephart, J. A., Gonzalez, P., Grimm, N. B., ... & Youngflesh, C. (2023). Priorities for synthesis research in ecology and environmental science. *Ecosphere*, *14*(1), e4342. 11. Nakagawa, S., Yang, Y., Macartney, E. L., Spake, R., & Lagisz, M. (2023). Quantitative evidence synthesis: a practical guide on meta-analysis, meta-regression, and publication bias tests for environmental sciences. *Environmental Evidence*, *12*(1), 1-19.

MODULE HANDBOOK

Module designation	Environmental Population and Development
Semester(s) in which the module is taught	2 / First year
Person responsible for the module	Dr. Hamza H. Wulakada, SP.,M.Si
Lecturer	1. Dr. Hamza H. Wulakada, SP.,M.Si 2. Prof. Dr. I G B Arjana, MS
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	1. Small Group Discussion 2. Team Base Project 3. Role-Play and Simulation 4. Self-Directed Learning
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 1. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 2. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 3. Academic activities in the laboratory (field trip) 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 4. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-1: Graduates are expected Able to communicate complex environmental issues and research findings to a wide range of audiences, including policy makers, scientists, and the public. PLO-5: Graduates able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-10: Graduates able to develop and implement environmental policies and strategies that address complex environmental challenges and promote sustainable development. Course Learning Outcomes (CLO): CLO-1: Able to Conduct demographic analyses to interpret population trends, age structures, and their implications for environmental management and development. CLO-2: Able to Evaluate the impacts of urbanization on the environment and develop sustainable land use planning strategies to accommodate population growth. CLO:3: Able to analyze how population dynamics contribute to vulnerability to climate change and develop adaptive strategies for affected communities. CLO-4: Able to create and Consider cross-cultural perspectives in understanding the links between population, development, and environmental challenges.

Content	1. Introduction (fundamental and Population Theories) 2. Migration and Environmental Change 3. Population Impact on Natural Resources and Sustainable Development 4. Women's Empowerment and Population 5. Demographic Dynamics and Tourism 6. Climate Change and Migration 7. Population Policy and Development 8. Population Vulnerability to Disasters 9. Interdisciplinary Approaches 10. Technology and Innovation in Population Management 11. Community Engagement and Public Participation
Examination forms	Assessment covers written tests (middle exams and semester final exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using a value of 25% soft skill, 15% assignment, 30% mid -test and 30% final test. Students pass competence if they get a minimum point 70.
Reading List	1. Ahmad, T. I., Altaf, M., & Kiran, K. (2020). Analyzing the long run linkage between Population, Economic Development and Energy Consumption on Carbon emissions of ASEAN Nations. *iRASD Journal of Energy & Environment*, *1*(1), 26-37. 2. Sener, M. Y. (2023). Mass migration due to climate change? A critique of the security focus on climate mobilities. In *Welfare States in a Turbulent Era* (pp. 195-209). Edward Elgar Publishing. 3. Li, A., Toll, M., & Bentley, R. (2022). Social vulnerability indicators to the health impacts of climate change: a scoping review. 4. Tian, Z., Wang, Q., Liu, Y., & Wang, Z. (2023). Comparison of the tourist mobility patterns among demographic subgroups with mobile phone data: A case study of Chongqing, China. *Applied Geography*, *159*, 103090. 5. Wąsowicz-Zaborek, E. (2022). Consumer choice determinants of online intermediary tourism platforms. *International Journal of Management and Economics*, *58*(2), 161-178. 6. Leknoi, U., Yiengthaisong, A., & Likitlersuang, S. (2022). Community engagement initiative amid climate change crisis: Empirical evidence from a survey across Bangkok Metropolis of Thailand. *Cities*, *131*, 103995. 7. Carter, L., Cosijn, M., Williams, L. J., Chakraborty, A., & Kar, S. (2022). Including marginalised voices in agricultural development processes using an ethical community engagement framework in West Bengal, India. *Sustainability Science*, *17*(2), 485-496. 8. Fretwell, S. D. (2020). *Populations in a Seasonal Environment.(MPB-5)* (Vol. 106). Princeton University Press. 9. Piguet, E. (2022). Linking climate change, environmental degradation, and migration: An update after 10 years. *Wiley Interdisciplinary Reviews: Climate Change*, *13*(1), e746. 10. Bergougui, B., & Murshed, S. M. (2023). Aggregate and disaggregate impact of natural resources on sustainable development: New evidence from the latest institutional data. *Environmental and Sustainability Indicators*, *20*, 100302. 11. Kuang, H., Liang, Y., Zhao, W., & Cai, J. (2023). Impact of natural resources and technology on economic development and sustainable environment–Analysis of resources-energy-growth-environment linkages in BRICS. *Resources Policy*, *85*, 103865. 12. Hermawati, W., Ririh, K. R., Ariyani, L., Helmi, R. L., & Rosaira, I. (2023). Sustainable and green energy development to support women's empowerment in rural areas of Indonesia: Case of micro-hydro power implementation. *Energy for Sustainable Development*, *73*, 218-231.

MODULE HANDBOOK

Module designation	Human Ecology
Semester(s) in which the module is taught	2/ first year
Person responsible for the module	Dr. Hamza H. Wulakada, SP.,M.Si
Lecturer	1. Dr. Hamza H. Wulakada, SP.,M.Si 2. Dr. Blajan Konradus, MA
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	1. Small Group Discussion 2. Team Base Project 3. Role-Play and Simulation
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 4. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 5. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 6. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 3. Academic activities in the laboratory/ field Trip 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 4. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-5: Graduates are expected able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-10: Graduates should be able to develop and implement environmental policies and strategies that address complex environmental challenges and promote sustainable development. PLO-11 : Graduates should be able to analyze and evaluate environmental problems and develop creative solutions to overcome such problems Course Learning Outcomes (CLO): CLO-1: Able to develop a solid understanding of the foundational principles, theories, and concepts of human ecology. CLO-2: Able to Investigate the links between human health and ecological factors, considering how environmental changes influence public health.. CLO-3: Able to examine the cultural dimensions of human-environment interactions, including the ways in which culture shapes perceptions and behaviors towards the environment. CLO-4 :Abel to Analyze human responses and adaptation strategies to climate change, considering both mitigation and resilience-building efforts.

Content	1. Foundations of Human Ecology 2. Ecosystem Dynamics, Human Interactions and Cultural Ecology 3. Social Systems,Urban Ecology and Environmental Change 4. Human Adaptation and Resilience 5. Biodiversity Conservation and Human Activities 6. Globalization and Human-Ecological Systems 7. Human Health and Ecological Factors 8. Sustainability and Human Ecology 9. Climate Change and Human Responses 10. Human-Environment Ethics and Decision-Making 11. Interdisciplinary Approaches to Human Ecology
Examination forms	Assessment covering written tests (midterm exams, final semester exams, practicum exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 50% (including 10% quiz, 10% assignment, 15% mid-test and 15% final test) and 50% project (25% participatory activity and 25% project results). Students pass competence if they get a minimum point is 70.
Reading List	1. Laris, P., Caillault, S., Dadashi, S., & Jo, A. (2015). The human ecology and geography of burning in an unstable savanna environment. *Journal of Ethnobiology*, *35*(1), 111-139. 2. Eisler, A. D., Eisler, H., & Yoshida, M. (2003). Perception of human ecology: cross-cultural and gender comparisons. *Journal of Environmental Psychology*, *23*(1), 89-101. 3. Van Eetvelde, V., & Aagaard Christensen, A. (2023). Theories in landscape ecology. An overview of theoretical contributions merging spatial, ecological and social logics in the study of cultural landscapes. *Landscape Ecology*, 1-32. 4. Pickerill, J., Chitewere, T., Cornea, N., Lockyer, J., Macrorie, R., Blažek, J. M., & Nelson, A. (2024). URBAN ECOLOGICAL FUTURES: Five Eco-Community Strategies for more Sustainable and Equitable Cities. *International Journal of Urban and Regional Research*, *48*(1), 161-176. 5. Okosodo, E. F., & Ogidi, O. I. (2023). Biodiversity Conservation Strategies and Sustainability. In *Sustainable Utilization and Conservation of Africa's Biological Resources and Environment* (pp. 61-84). Singapore: Springer Nature Singapore. 6. Omoke, P. C., Nwani, C., & Effiong, E. L. (2023). Globalization and its environmental effects: assessing the role of de facto and de jure conditions in trade, financial and information (ICT) developments in West Africa. *Climate and Development*, 1-16. 7. Zhang, X., Qu, H., Liu, Q., Zhang, Y., Hu, D., & Tian, H. (2023). Ecological of human health risk of total petroleum hydrocarbons and four metals in seawater of the southeastern Bohai Sea, China. *Environmental Science and Pollution Research*, *30*(3), 5758-5773. 8. Mebane, E., Minou, B., Maura, F., Donata, P., & Anna, B. (2023). How climate change is changing us: a pilot study on whether negative and positive affect towards climate change promote environmentalement or unhealthy behaviors. *Psicologia di comunità: gruppi, ricerca azione e modelli formativi: 1, 2023*, 54-73. 9. Rathi, N. (2023). *Understanding Human-Environment Relationship of Local Communities-A Case Study of Nijgadh International Airport* (Doctoral dissertation, IOE Pulchowk Campus). 10. Durac, L. (2023). The Ethics of Environmental Preservation at the Confluence of the Traditional Approach and Current Challenges. *Philosophy*, *13*(10), 430-435. 11. Tashtamirov, M. (2023). Interdisciplinary Approaches to Environmental Problems in Urbanized and Industrial Areas. In *BIO Web of Conferences* (Vol. 63, p. 07013). EDP Sciences.

MODULE HANDBOOK

Module designation	Environmental administration planning
Semester(s) in which the module is taught	2 / first year
Person responsible for the module	Dr. Ir. Ida Nurwiana, M.Si
Lecturer	1. Dr. Ir. Ida Nurwiana, M.Si 2. Dr. Siprianus Radho Toly, M.Sc
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	Lecture, discussion, group presentation, project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 1. Academic activities in the laboratory/field trip 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 2. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-1 : Graduates are expected able to communicate complex environmental issues and research findings to a wide range of audiences, including policy makers, scientists, and the public. PLO-5: Graduates are expected able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-6: Graduates are expected able to learn for life and can keep up with the latest developments in environmental science and policy PLO-10: Graduates are expected able to develop and implement environmental policies and strategies that address complex environmental challenges and promote sustainable development. Course Learning Outcomes (CLO): CLO-1: Evaluate and analyze environmental policies at various levels, assessing their effectiveness and implications for sustainable environmental practices. CLO-2: Able to Understand and interpret environmental laws and regulations, applying them to administrative planning and decision-making. CLO-3 : Apply EIA methodologies to assess the potential environmental, social, and economic impacts of proposed projects and policies. CLO-4: Develop budgetary plans for environmental projects, considering financial resources, cost-benefit analysis, and fiscal responsibility. CLO-5 : Apply project management techniques to plan, implement, and evaluate environmental initiatives, considering timelines, resources, and outcomes.
Content	1. Public Administration Principles 2. Policy Analysis and Regulatory Frameworks 3. Environmental Impact Assessment (EIA) 4. Budgeting and Financial Management 5. Data Analysis and Decision Support Systems 6. Risk Assessment and Management 7. Conflict Resolution 8. Communication Skills and Legal Compliance 9. Ethical Considerations 10. Continuous Improvement 11. Data Analysis and Decision Support Systems

Examination forms	Assessment covering written tests (midterm exams, final semester exams, practicum exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 50% (including 10% quiz, 10% assignment, 15% mid-test and 15% final test) and 50% project (25% participatory activity and 25% project results). Students pass competence if they get a minimum point is 70.
Reading List	1. Jahncke, M. L., Spencer, E., Reilly, G. A., Martin, R. E., and Cole, E. 2002. Public, Animal, and Environmental Aquaculture Health Issues 1st ed. Wiley-onerscience. 204 p. 2. Landau, M. 1991. Introduction to Aquaculture. 1st edition. John Wiley & Sons. 464 p. 3. Lucas, J. S., Southgate, P. C., and Tucker, C. S. (Eds). 2018. Aquaculture: Farming Aquatic Animals and Plants 3rd Ed. Wiley-Blackwell. 664 p. 4. Mukti, A., T., Arief, M., and Hastuti, W. H., 2019. Textbook on principles of aquaculture. Airlangga University Press, Surabaya. 5. Pillay T.V.R. 2004. Aquaculture and Environment. 2nd ed. Wiley-Blackwell. 208 p. 6. Pillay, T.V.R. and Kutty, M.N. 2005. Aquaculture, Principles and practices. 2nd ed. Wiley-Blackwell. 640 p. 7. Schmittou, H.R., Jian, Z., and Cremer, M. C. 2004. Principles and Practicals of Pond Aquaculture Using 80:20 System. American Soybean Association. 8. Kaikkonen, L., Parviainen, T., Rahikainen, M., Uusitalo, L., & Lehikoinen, A. (2021). Bayesian networks in environmental risk assessment: A review. *Integrated environmental assessment and management*, *17*(1), 62-78.

MODULE HANDBOOK

Module designation	Principles of Environmental Degradation and Pollution
Semester(s) in which the module is taught	2 / first year
Person responsible for the module	Ir. I N Prijo Soetedjo, M.Sc.,Ph.D
Lecturer	1. Ir. I N Prijo Soetedjo, M.Sc.,Ph.D 2. Fidelis Nitti,S.Si.,M.Sc.,PhD
Language	Indonesian
Relation to curriculum	Elective Course
Teaching methods	Lecture and concept explanation Experimental demonstration group discussion Team Base Project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 1. Academic activities in the laboratory/field trip 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 2. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	1. Environmental Science
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-3: Graduates are expected able to understand in depth the physical, chemical, and biological systems that support the environment. This includes knowledge of ecosystem dynamics, climate change, pollution, and natural resource management. PLO-8: Graduates must possess have the necessary skills to manage data, convey information in the field of Environmental Science, and provide alternative solutions when needed PLO-11: Graduates should be able to analyze and evaluate environmental problems and develop creative solutions to overcome such problems. Course Learning Outcomes (CLO): CLO-1: Able to Demonstrate a deep understanding of the fundamental principles and theories related to environmental degradation and pollution. CLO:2: Able to Examine sources and emission pathways of pollutants, considering both natural and anthropogenic contributions to environmental degradation. CLO:3: Able to Apply various environmental monitoring techniques to assess the levels and trends of pollutants in different

	environmental compartments. CLO-4: Able to Utilize environmental modeling tools to simulate and predict the transport, fate, and effects of pollutants in various environmental media. CLO-5: Able to Develop strategies for raising public awareness and promoting environmental education to address and prevent environmental degradation and pollution.

Content	1. Introduction (Fundamental Principles) 2. Identification of Environmental Stressors, Sources and Emission Pathways 3. Environmental Monitoring Techniques and Impact Assessment 4. Environmental Modeling 5. Social and economic implications of environmental degradation and pollution 6. Adaptation and Mitigation Strategies 7. Community Role and Public Participation 8. Environmental Education and Public Awareness 9. Current Discussions and Trends
Examination forms	Assessment covering written tests (midterm exams, final semester exams, practicum exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 50% (including 10% quiz, 10% assignment, 15% mid-test and 15% final test) and 50% project (25% participatory activity and 25% project results). Students pass competence if they get a minimum point is 70.
Reading List	1. Cyprian, T. N., & Ekperi, N. I. (2022). Predictive Approach of Determining Rate of Degradation of Solid Waste in an Anaerobic Digester. *International Journal of Prevention and Control of Industrial Pollution*, *8*(1), 7-13p. 2. Nawaz, M., Sun, J., Shabbir, S., Khattak, W. A., Ren, G., Nie, X., ... & Sonne, C. (2023). A review of plants strategies to resist biotic and abiotic environmental stressors. *Science of the Total Environment*, 165832. 3. Wu, X., Zhao, X., Chen, R., Liu, P., Liang, W., Wang, J., ... & Gao, S. (2022). Wastewater treatment plants act as essential sources of microplastic formation in aquatic environments: A critical review. *Water Research*, *221*, 118825. 4. Arantes, L. T., Arantes, B. H. T., Sacramento, B. H., da Costa, H. F., de Oliveira, R. A., Simonetti, V. C., ... & Lourenço, R. W. (2023). Application of spatial environmental indicators in the assessment of degradation potential of water resources in water basins. *Environmental Monitoring and Assessment*, *195*(8), 931. 5. Yan, F., Li, N., Wang, J., & Wu, H. (2023). Ecological footprint model of heavy metal pollution in water environment based on the potential ecological risk index. *Journal of Environmental Management*, *344*, 118708. 6. Xing, L., Khan, Y. A., Arshed, N., & Iqbal, M. (2023). Investigating the impact of economic growth on environment degradation in developing economies through STIRPAT model approach. *Renewable and Sustainable Energy Reviews*, *182*, 113365. 7. Ashtt, R., & Mathur, M. (2023). Role of Governance in Quality-of-life Assessment in the Historic City of Shahjahanabad, Delhi. *Rivista Italiana di Filosofia Analitica Junior*, *14*(2), 1272-1286. 8. Kurniati, A. C., Putri, W. E. C., Zamroni, A., Sagala, S. T., & Rachmawati, Y. (2023, June). How to educate children in the mining areas: A concept to implement environmental education for elementary students in Indonesia. In *AIP Conference Proceedings* (Vol. 2598, No. 1). AIP Publishing. 9. Zafirovska, S. (2023). *Case Study: Urban Teachers' Perspective on Environmental Education in North Macedonia* (Doctoral dissertation, University of Minnesota).

3rd Semester

No.	Course Code	Course	Year	Semester	Credit	ECTS
Compulsory Courses						
1.	IPSAL 63313	Environmental Impact Analysis	2	3	3(2-1)	4.8
Elective Courses [three elective course from four specializations of the study program]						
2.	IPSAL 62309	Principles and Techniques of Inventorying Natural Resources and the Environment	2	3	3(2-1)	4.8
3.	IPSAL 63317	Environmental Law	2	3	3(3-0)	4.8
4.	IPSAL 63220	Natural Resources Management and Irrigation	2	3	3(2-1)	4.8

MODULE HANDBOOK

Module designation	Environmental Impact Analysis
Semester(s) in which the module is taught	3 / second year
Person responsible for the module	Dr. Ir. Ida Nurwiana, M.Si
Lecturer	1. Dr. Ir. Ida Nurwiana, M.Si 2. Dr. Suwari, S.Pd.,M.Si
Language	Indonesian
Relation to curriculum	Compulsory Course
Teaching methods	1. Small Group Discussion 2. Role-Play and Simulation 3. Team base Project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 4. Academic activities in the laboratory/field trip 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 5. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	Environmental Science

Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-4: Graduates are expected able to understand holistically about environmental laws and regulations at local, national, and international levels, and be able to apply this knowledge in their work PLO-8: Graduates should have the necessary skills to manage data, convey information in the field of Environmental Science, and provide alternative solutions when needed PLO-10 : Graduates are expected able to develop and implement environmental policies and strategies that address complex environmental challenges and promote sustainable development. Course Learning Outcomes (CLO): CLO-1: Able to demonstrate a comprehensive understanding of the principles, processes, and methodologies of Environmental Impact Assessment (EIA). CLO-2:Able to evaluate and compare alternative project scenarios, considering their environmental, social, and economic implications CLO-3 : Able to Develop and implement post-implementation monitoring plans to assess the actual impacts of projects and the effectiveness of mitigation measures. CLO-4:Able to develop skills in predicting and assessing potential environmental, social, and economic impacts of proposed projects or policies CLO-5: Able to apply feedback mechanisms to continuously improve the EIA process and contribute to the development of best practices.
Content	1. Introduction to Environmental Impact Analysis (EIA) 2. Legal Framework and EIA Regulations 3. Initial Assessment and Area Mapping, Scoping Methods and Baseline Studies 4. Impact Prediction and Selection of Impact Analysis Methods 5. Risk Evaluation and Management 6. Mitigation and Impact Prevention 7. Post-Implementation Impact Monitoring 8. Stakeholder Participation 9. Environmental Modeling and Simulation 10. EIA Case Studies 11. Application of International Standards 12. Evaluation and Development of EIA
Examination forms	Assessment covers written tests (middle exams and semester final exams), soft skills and group presentations (assignments)

Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using a value of 25% soft skill, 15% assignment, 30% mid -test and 30% final test. Students pass competence if they get a minimum point 70.
Reading List	1. EAP, C. C. C. (2023). Environmental Impact Assessment (Scoping) And Management Plan Report. 2. Mayembe, R., Simpson, N. P., Rumble, O., & Norton, M. (2023). Integrating climate change in Environmental Impact Assessment: A review of requirements across 19 EIA regimes. *Science of The Total Environment*, *869*, 161850. 3. Harrison, J. (2023). Significant International Environmental Law Developments: 2022–2023. *Journal of Environmental Law*, *35*(3), 467-479. 4. He, X., & Ouyang, H. (2023). Evaluating EIA implementation in China: An empirical study of 161 EIA judicial cases. *Environmental Impact Assessment Review*, *100*, 107075. 5. O'Regan, A. C., & Nyhan, M. M. (2023). Towards sustainable and net-zero cities: A review of environmental modelling and monitoring tools for optimizing emissions reduction strategies for improved air quality in urban areas. *Environmental Research*, 116242. 6. Addington, P. (2023). *Expeditionary Energy in the Arctic Domain: The Impacts of Emerging Technology and Interoperability on Energy Requirements in the High North Environment* (Master's thesis, FHS). 7. Rusmayadi, G., Supriandi, S., & Pahrijal, R. (2023). Trends and Impact of Sustainable Energy Technologies in Mechanical Engineering: A Bibliometric Study. *West Science Interdisciplinary Studies*, *1*(09), 831-841. 8. Prihandrijanti, M., & Azzizi, V. T. (2023, November). Geospatial and Temporal Analysis of Temperature-Humidity Index (THI) as Climate Mitigation Tool in Glamping Site in Cimahi North, West Java, Indonesia. In *IOP Conference Series: Earth and Environmental Science* (Vol. 1264, No. 1, p. 012024). IOP Publishing. 9. Diogo, V., Jacobs-Crisioni, C., Baranzelli, C., & Lavalle, C. (2023). Integrated Spatial Simulation of Population and Urban Land Use: a Pan-European Model Validation. *Applied Spatial Analysis and Policy*, 1-30. 10. Ajayi, S. A., Olaniyi, O. O., Oladoyinbo, T. O., Ajayi, N. D., & Olaniyi, F. G. (2024). Sustainable sourcing of organic skincare ingredients: A critical analysis of ethical concerns and environmental implications. *Asian Journal of Advanced Research and Reports*, *18*(1), 65-91. 11. Cilliers, D., Cloete, M., Bond, A., Retief, F., Alberts, R., & Roos, C. (2023). A critical evaluation of visibility analysis approaches for visual impact assessment (VIA) in the context of environmental impact assessment (EIA). *Environmental Impact Assessment Review*, *98*, 106962.

MODULE HANDBOOK

Module designation	Principles and Techniques of Inventorying Natural Resources and the Environment
Semester(s) in which the module is taught	3 / second year
Person responsible for the module	1. Prof. Drs. M. Lumban Gaol, M.Si.,Ph.D
Lecturer	1. Prof. Drs. M. Lumban Gaol, M.Si.,Ph.D 2. Dr. Franchy Ch. Liufeto, S.Pi. M.Si

Language	Indonesian
Relation to curriculum	Elective Course
Teaching methods	1. Small Group Discussion 2. Role-Play and Simulation 3. Self-Directed Learning 4. Team Base Project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 4. Academic activities in the laboratory/field trip 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 5. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	Environmental Science
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-3: Graduates Able to understand in depth the physical, chemical, and biological systems that support the environment. This includes knowledge of ecosystem dynamics, climate change, pollution, and natural resource management. PLO-5: Graduates able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-7: Graduates should have to work independently and as part of a team, collaborating with others to achieve common goals Course Learning Outcomes (CLO): CLO-1: Able to understand the key concepts and methodologies involved in inventorying various natural resources, including biodiversity, water resources, soil, and air quality. CLO-2: Able to demonstrate knowledge of different sampling methods and their application in obtaining representative data for natural resource and environmental inventories. CLO:3: Able to develop strategies for adapting inventorying techniques to changing environmental conditions and emerging challenges. CLO-4: Able to analyze the policy implications of inventory findings, contributing to evidence-based decision-making in environmental management.
Content	1. Introduction (Fundamental Principles of Inventorying) 2. Environmental Inventory Technique 3. Biodiversity, water resources, soil and air quality Inventory 4. Ecosystem Services Assessment 5. Integration of Inventory Data 6. Use of Technology in Inventorying 7. Adaptation to Changing Environments 8. Communication of Inventory Results and Policy Implications
Examination forms	Assessment covers written tests (middle exams and semester final exams), soft skills and group presentations (assignments)

Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using a value of 25% soft skill, 15% assignment, 30% mid -test and 30% final test. Students pass competence if they get a minimum point 70.
Reading List	1. Boadway, R., & Flatters, F. (2023). The taxation of natural resources: principles and policy issues. In *Taxing Choices for Managing Natural Resources, the Environment, and Global Climate Change: Fiscal Systems Reform Perspectives* (pp. 17-81). 2. Cham: Springer International Publishing.Ma, L. (2023). Obtaining green environmental revival through natural resources price variations: Estimations through GARCH technique. *Environmental Science and Pollution Research*, *30*(21), 60303-60313 3. .Simon, F., Gironás, J., Rivera, J., Vega, A., Arce, G., Molinos-Senante, M., ... & Cortés, S. (2023). Toward sustainability and resilience in Chilean cities: lessons and recommendations for air, water, and soil issues. *Heliyon*, *9*(7). 4. Jiang, L., Wang, Z., Zuo, Q., & Du, H. (2023). Simulating the impact of land use change on ecosystem services in agricultural production areas with multiple scenarios considering ecosystem service richness. *Journal of Cleaner Production*, *397*, 136485. 5. Zhao, W. X., Samour, A., Yi, K., & Al-Faryan, M. A. S. (2023). Do technological innovation, natural resources and stock market development promote environmental sustainability? Novel evidence based on the load capacity factor. *Resources Policy*, *82*, 103397. 6. Raza, S., Ghasali, E., Raza, M., Chen, C., Li, B., Orooji, Y., ... & Erk, N. (2023). Advances in technology and utilization of natural resources for achieving carbon neutrality and a sustainable solution to neutral environment. *Environmental research*, *220*, 115135. 7. Raihan, A. (2023). A review of the global climate change impacts, adaptation strategies, and mitigation options in the socio-economic and environmental sectors. *Journal of Environmental Science and Economics*, *2*(3), 36-58 8. Farhi, F., Jeljeli, R., Slamene, R., Mohsen, M., & Zamoum, K. (2023). Towards Communication in Achieving Sustainable Economic Development Goals: The Role of Communication in UAE Media Institutions. *Sustainability*, *15*(10), 7933.

MODULE HANDBOOK

Module designation	Environmental Law
Semester(s) in which the module is taught	3 / second year
Person responsible for the module	Prof. Dr. Jimmy Pello, SH.,MS
Lecturer	Prof. Dr. Jimmy Pello, SH.,MS
Language	Indonesian
Relation to curriculum	Elective Course
Teaching methods	Lectures, discussions, group presentation, project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 7. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 8. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 9. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 5. Academic activities in the laboratory/field trip 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 6. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-5: Graduates able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-6: Graduates should be able to learn for life and can keep up with the latest developments in environmental science and policy PLO-10: Graduates able to develop and implement environmental policies and strategies that address complex environmental challenges and promote sustainable development. Course Learning Outcomes (CLO): CLO-1: Able to Identify and analyze national and international legal frameworks governing environmental protection and natural resource management. CLO-2: able to analyze legal cases related to environmental issues, critically evaluating decisions and their implications. CLO-3: Able to Evaluate environmental policies, considering their legal implications, effectiveness, and potential for sustainable resource management. CLO-4: Able to Analyze legal aspects of land use planning, zoning, and sustainable development regulations.

Content	1. Fundamentals of Environmental Law 2. National and international Environmental Regulations 3. Environmental Law and Sustainable Development 4. Enforcement of Environmental Law 5. Litigation Strategies 6. Natural Resource Management 7. Environmental Governance and justice 8. Corporate Environmental Responsibility 9. Wildlife and Conservation Laws and Emerging Legal Issues

Examination forms	Assessment covering written tests (midterm exams, final semester exams, practicum exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 50% (including 10% quiz, 10% assignment, 15% mid-test and 15% final test) and 50% project (25% participatory activity and 25% project results). Students pass competence if they get a minimum point is 70.
Reading List	1. Blumstein, C. (Ed.). (2020). Environmental Law Handbook (24th ed.). Government Institutes. 2. Farber, D. A., Carlson, D. A., & Heller, T. C. (2013). Environmental Law (8th ed.). Wolters Kluwer Law & Business. 3. Zhou, K., Yi, L., Su, X., & Sun, Y. (2023). Overview of Environmental Law. In *Environmental and Resource Protection Law* (pp. 13-36). Singapore: Springer Nature Singapore. 4. Bándi, G. (2020). Principles of EU environmental law including (the objective of) sustainable development. In *Research Handbook on EU Environmental Law* (pp. 36-53). Edward Elgar Publishing. 5. Seini, H. A. (2022). The Role of Environmental Protection Agency Under Ghana's Fourth Republic. In *Democratic Governance, Law, and Development in Africa: Pragmatism, Experiments, and Prospects* (pp. 669-694). Cham: Springer International Publishing. 6. Conde, M., Walter, M., Wagner, L., & Navas, G. (2023). Slow justice and other unexpected consequences of litigation in environmental conflicts. *Global Environmental Change*, *83*, 102762. 7. De Vido, S. (2023). The Privatisation of climate change litigation: current developments in conflict of laws. *Jus Cogens*, 1-24. 8. Brottrager, M., Crespo Cuaresma, J., Kniveton, D., & Ali, S. H. (2023). Natural resources modulate the nexus between environmental shocks and human mobility. *Nature Communications*, *14*(1), 1393. 9. Mpuure, D. M. N., & Mengba, J. D. (2023). Natural resource dependence, policy and institutions for environmental sustainability and African welfare. *Sustainable Development*. 10. Wang, Y., & Zhang, M. (2024). The role of environmental justice: Environmental courts, analysts' earnings pressure and corporate environmental governance. Environmental Impact Assessment Review, 104, 107299. 11. Basuki, A., Zaid, M., & Musa, A. A. M. (2023). Establishing ecological justice in the governance of land inventory, ownership, and utilisation in Indonesia. Journal of Law, Environmental and Justice, 1(2), 137-154. 12. Devi, S., & Singh, S. (2023). The Evolution and Impact of International Environmental Law: A Journey towards a Sustainable Future. NUJS J. Regul. Stud., 8, 21.

MODULE HANDBOOK

Module designation	Natural Resources Management and Irrigation
Semester(s) in which the module is taught	3 / second year
Person responsible for the module	Prof.Dr. Ir. Denik Sri Krisnayanti, ST.,MT
Lecturer	1. Prof.Dr. Ir. Denik Sri Krisnayanti, ST.,MT 2. 2. Dr. Jakobis J. Messakh, S.Pd.,M.Si
Language	Indonesian
Relation to curriculum	Elective Course
Teaching methods	Lecture, discussion, group presentation, Team Base project
Workload (incl. Contact hours, self-study hours)	Theory (2 credits) 4. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 5. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 6. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 3. Academic activities in the laboratory 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 4. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	3 CU = 4.8 ECTS
Required and recommended prerequisites for joining the module	Environmental Science
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-3: Graduates are expected to understand in depth the physical, chemical, and biological systems that support the environment. This includes knowledge of ecosystem dynamics, climate change, pollution, and natural resource management. PLO-5: Graduates should be able to be aware of the social and cultural factors that influence environmental issues and be able to work effectively with diverse communities and stakeholders. PLO-11: Graduates able to analyze and evaluate environmental problems and develop creative solutions to overcome such problems. Course Learning Outcomes (CLO): CLO-1: Able todemonstrate a comprehensive understanding of the principles and concepts of natural resources management and irrigation. CLO-2: Able to analyze and apply sustainable agriculture practices within the context of natural resources management and irrigation. CLO-3 : Able to assess the impact of climate change on natural resources and develop strategies for adaptation, especially in the context of irrigation practices. CLO-4: Able to develop skills in conflict resolution related to natural resources use and irrigation, considering competing interests and perspectives.
Content	1. Fundamentals of Natural Resources Management 2. Sustainable Agriculture Practices 3. Integrated Water Resource Management

	4. Climate Change Adaptation 5. Community Engagement and Conflict Resolution 6. Policy Analysis and Economic Considerations 7. Conflict resolution related to natural resources use and irrigation 8. Recognition and assessment of the ecosystem services provided by natural resources, particularly in the context of irrigation-dependent agriculture. 9. Innovative Technologies and Research Application
Examination forms	Assessment covering written tests (midterm exams, final semester exams, practicum exams), soft skills and group presentations (assignments). Interactive Lectures: Introduction of concepts and principles through presentations and discussions.Case Studies: Analysis of real cases to connect theory with practical situations.Group Discussions: Small group discussions on specific topics.Individual and Group Assignments: Assignments to enhance understanding and analytical skills.
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 50% (including 10% quiz, 10% assignment, 15% mid-test and 15% final test) and 50% project (25% participatory activity and 25% project results). Students pass competence if they get a minimum point is 70.
Reading List	1. Pandey, V. P., Shrestha, N., Urfels, A., Ray, A., Khadka, M., Pavelic, P., ... & Krupnik, T. J. (2023). Implementing conjunctive management of water resources for irrigation development: A framework applied to the Southern Plain of Western Nepal. *Agricultural Water Management*, *283*, 108287. 2. Ju, Q., Du, L., Liu, C., & Jiang, S. (2023). Water resource management for irrigated agriculture in China: Problems and prospects. *Irrigation and Drainage*.Wang, K. (2017). Integrated Water Resources Management and Modelling for Decision-making at the River Basin Scale.Espindola, I., & Villar, P. (2023). Politics of Local Community Engagement in Transboundary Water Negotiations. In *Oxford Research Encyclopedia of Environmental Science*. 3. Mazzeo, G. (2023). Analysis of strategic natural resources: the FEW Nexus model applied to Irpinia (Italy) and implications for regional planning. *TeMA-Journal of Land Use, Mobility and Environment*, 123-142. 4. Gupta, K. (2023). Exploring the nexus of freshwater resources and international conflict: bibliometric insights and a research agenda for the future. *Int. J. Water*, *15*(4), 335. 5. Smith, M. D., Sikka, A., Dirwai, T. L., & Mabhaudhi, T. (2023). Research and innovation in agricultural water management for a water-secure world. *Irrigation and Drainage*, *72*(5), 1245-1259. 6. Novikov, O., Potryvaieva, N., Karpenko, M., & Sadovoy, O. (2021). The role of irrigation in the formation of the innovation and investment environment of the region.

4th Semester

No.	Course Code	Course	Year	Semester	Credit	ECTS
Final Project courses						
1.	PPs 601	Colloquium	2	4	1(1-0)	1.6
2	PPs 699	Thesis	2	4	6(6-0)	9.6

MODULE HANDBOOK

Module designation	Colloquium
Semester(s) in which the module is taught	4/ second year
Person responsible for the module	University Final project course team
Language	Indonesian
Relation to curriculum	Final project Course
Teaching methods	1. Small Group Discussion and presentation 2. Role-Play and Simulation
Workload (incl. Contact hours, self-study hours)	Theory (1 credits) 4. Lecture in class 2 Credit x 50 Minutes x 14 Meetings = 1,400 minutes 5. Structural Assignment 2 Credit x 60 Minutes x 14 Meetings = 1,680 minutes 6. Self Study 2 Credit x 60 Minutes x 14 Meetings = 1,680 minutes
Credit points	1CU =1.6 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-1: Graduates Able to communicate complex environmental issues and research findings to a wide range of audiences, including policy makers, scientists, and the public. PLO-7: Graduates should have Able to work independently and as part of a team, collaborating with others to achieve common goals PLO-9: Graduates able to design and implement environmental research projects, collect and analyze data, and interpret results to make evidence-based decisions Course Learning Outcomes (CLO): CLO-1: Able to Demonstrate the ability to synthesize and critically evaluate a diverse range of research literature in the field of environmental studies. CLO-2:Able to Communicate research findings effectively through written reports, oral presentations, and other appropriate mediums.

Content	1. Research Synthesis 2. Research Design 3. Literature Review 4. Research Methodologies 5. Critical Thinking 6. Peer Review and Feedback 7. Reflection and Self-Evaluation
Examination forms	Assessment covers written tests and presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using a value of 25% soft skill, 15% assignment, 30% mid -test and 30% final test. Students pass competence if they get a minimum point 70.
Reading List	1. Avsar, A., Ochoa, H., Guinea, F., Özyilmaz, B., Van Wees, B. J., & Vera-Marun, I. J. (2020). Colloquium: Spintronics in graphene and other two-dimensional materials. Reviews of Modern Physics, 92(2), 021003. 2. McDougall, B. S. (2020). Mao Zedong's "Talks at the Yan'an Conference on Literature and Art": A translation of the 1943 text with commentary (p. 113). University of Michigan Press. 3. EFIAP, U. The 22 nd Irish Environmental Researchers Colloquium (ENVIRON 2012) is organised in a partnership between the Environmental Sciences Association of Ireland and University College Dublin. 4. Arifin, E. Zaenal and S. Amran Tasai.1989. Carefully Speaking Indonesian for Higher Education . Jakarta: PT Mediatama Sarana Perkasa. 5. Darmadi, Kaswan. 1996. Improving Writing: A Guide for College and Prospective College Students. Yogyakarta: Andi. 6. Razak, Abdul. 1990. Effective Sentences, Structure, Style, and Variety. Jakarta: PT Gramedia. 7. Suryawinata, Zuchrudin. and Imam Suyitno. 1991. Indonesian for Science & Technology. Poor: YA3. pp. 39--73. 8. Widyamartaya, A.. 1990. The Art of Brainstorming. Yogyakarta: Canisius. pp. 7--76.

MODULE HANDBOOK

Module designation	Thesis
Semester(s) in which the module is taught	4 / second year
Person responsible for the module	Dr. Ir. Alfred O. M. Dima, M.Si
Lecturer	University Final project course team
Language	Indonesian
Relation to curriculum	Final Project Course
Teaching methods	Lecture, discussion and group presentation
Workload (incl. Contact hours, self-study hours)	Theory (6 credits) 1. Lecture in class 2 SKS x 50 Minutes x 14 Meetings = 1,400 minutes 2. Structural Assignment 2 credits x 60 minutes x 14 meetings = 1,680 minutes 3. Self Study 2 credits x 60 minutes x 14 meetings = 1,680 minutes Practicum (1 credit) 1. Academic activities in the laboratory 1 SKS x 120 minutes x 14 meetings = 1,680 minutes 2. Practicum Task 1 SKS x 50 minutes x 14 meetings = 700 minutes
Credit points	6CU = 9.6 ECTS
Required and recommended prerequisites for joining the module	Research Methodology
Module objectives/intended learning outcomes	Program Learning Outcomes (PLO): PLO-1: Graduates Able to communicate complex environmental issues and research findings to a wide range of audiences, including policy makers, scientists, and the public. PLO-7: Graduates should have Able to work independently and as part of a team, collaborating with others to achieve common goals PLO-9: Graduates able to design and implement environmental research projects, collect and analyze data, and interpret results to make evidence-based decisions Course Learning Outcomes (CLO): CLO-1: Able to Demonstrate the ability to synthesize and critically evaluate a diverse range of research literature in the field of environmental studies. CLO-2:Able to Communicate research findings effectively through written reports, oral presentations, and other appropriate mediums.

Content	1. Research Synthesis 2. Research Design 3. Literature Review 4. Research Methodologies 5. Critical Thinking 6. Peer Review and Feedback 7. Reflection and Self-Evaluation
Examination forms	Assessment covering written tests (midterm exams, final semester exams, practicum exams), soft skills and group presentations (assignments)
Study and examination requirements	If students attend lectures (including not present due to illness or permission)> = 80% so they can join the exam Assessment of competency achievement using the theoretical value of 70% (including 25% soft skills, 15% assignment, 30% mid-test and 30% final test) and 30% practicum. Students pass competence if they get a minimum point 70.
Reading List	1. PIRAUX, M. (2022). *Master Thesis: Research plan* (Doctoral dissertation, Universiteit Gent). 2. DEMİRBAŞ, İ. (2023). Content analysis of master's and phd thesis on climate: Studies conducted in the field of education in Türkiye. *Journal of Human and Social Sciences*, *6*(2), 322-342. 3. Pikkarainen, A., Kantanen, M. S., & Honka, P. (2023). Development of a new master´ s degree program based on work life requirements. *European Journal of Education Studies*, *10*(6). 4. Osello, A., Ugliotti, F. M., & Yılmaz, A. O. O. (2023). Thesis for Master of Science. 5. Kaakinen, P., Suhonen, M., Lutovac, S., & Kaasila, R. (2023). Students experiences of peer-support during a Master's thesis process.