PL6133 Infrastructure and	<b>I</b> Transportation	Management
---------------------------	-------------------------	------------

Module designation	Infrastructure and Transportation Management		
Semester(s) in which the module is taught	3 <sup>rd</sup> Semester		
Person responsible for the module	Dr. Ir. Binsar Parasian Naipospos, M.SP.		
Language	Indonesian		
Relation to curriculum	Compulsory - elective for Infrastructure and Transportation System concentration		
Teaching methods	Lectures and discussions, case studies, brainstorming, seminars		
Workload (incl. contact hours, self- study hours)	<ul> <li>(Estimated) Total workload: around 9 hours per week x 16 weeks = 144 hours</li> <li>Contact hours: 2 hours per week = 2 x 16 = 32 hours</li> <li>Self-study hours: 7 hours per week = 7 x 16 = 112 hours</li> </ul>		
Credit points	3 CU/5 ECTS		
Required and recommended prerequisites for joining the module	-		
Module objectives/inten ded learning outcomes	<ul> <li>Students are able to evaluate regional and urban infrastructure management approaches, by understanding theory and practice and explaining various types and related issues.</li> </ul>		
	<ul> <li>Students are able to formulate and compile a map of infrastructure management problems within a framework of regional and urban plans</li> </ul>		
Content	This course discusses the short history of urban transport and infrastructure services, its operating system from the supply and demand perspectives, the level of service received by the customer and the costs to be paid by them, the context of regulations, institutions, and stakeholders involved in setting standards and service rates, variety of development financing, and alternative service models developed in the community.		
Examination forms	Written exam (final exam), group presentation		
Study and examination requirements	Supporting activities: Lab practicum, class discussion, group work Scoring weighs Group Task: 30% Midterm Exam : 35% Final Exam: 35%		

Reading list	1. Vuchic, Vukan R, Urban Public Transportation, System and Technology, Prentice Hall Inc. 1981
	<ol> <li>Loucks, Daniel P., van Beck, Eel co., Water Resource System Planning and Management, , Unesco &amp; WL Delft Hydraulics,, 2005</li> </ol>
	<ol> <li>FHWA, Freeway Management and Operation Handbook, , , 2001</li> </ol>
	<ol> <li>Fox, William F.,, Strategic Options for Urban Infrastructure Management, , World Bank,, 1998</li> </ol>
	<ol> <li>Ferguson, Eric, Travel Demand Management and Public Policy, , Ashgate,, 2000</li> </ol>
	<ol> <li>Uwe, Arnold, Urban Infrastructure Management, Bauhauss- Universitat Weimar,, 2008</li> </ol>

Module designation	Transportation and Infrastructure Analytical Methods
Semester(s) in which the module is taught	1 <sup>st</sup> Semester (first year of master program)
Person responsible for the	Dr. l Gusti Ayu Andani, S.T, M.T.
module	Shanty Yulianti Rachmat, S.T., M.T., M.Sc., Ph.D.
Language	Indonesian
Relation to curriculum	Compulsory - elective for Infrastructure and Transportation System concentration
Teaching methods	Collaborative learning; group assignment: preparation of assignment in the form of a case-based paper which is then presented
Workload (incl. contact hours, self- study hours)	(Estimated) Total workload: around 9 hours per week x 16 weeks = 144 hours
	• Contact hours: 2 hours per week = 2 x 16 = 32 hours
	• Self-study hours: 7 hours per week = 7 x 16 = 112 hours
Credit points	4 CU/6.67 ECTS
Required and recommended prerequisites for joining the module	PL5132 Infrastructure and Transportation System
Module objectives/inten ded learning outcomes	Able to evaluate and create appropriate infrastructure and transportation analysis methods, by understanding the required data and formulating analysis models to draw effective conclusions in planning
Content	Elaborating concepts of the behavior the transport system in terms of system activity and the traffic system. Basic understanding, the aggregate model, disaggregate model, the performance of the transportation system: operational transport, traffic, transportation routes. Development of quantitative and qualitative models of the transport system involving components, the behavior of transportation demand and transportation system performance.
Examination forms	Oral presentation and written exams.
Study and	Scoring
examination	Exam: 35%
	Final Project: 40%
	Weekly Presentation: 25%.

## PL6135 Transportation and Infrastructure Analytical Methods

Reading list	1.	Alizadeh, T., Shearer, H., & Sipe, N. (2015). Planning implications of telecommunication: Why telecommunication infrastructure? Why now? Australian Planner, 52(1), 1–3.
		https://doi.org/10.1080/07293682.2015.1019749.
	2.	Billings, R. B., & Jones, C. V. (2011). Forecasting urban water demand. American Water Works Association.
	3.	Borlase, S. (Ed.). (2017). Smart grids: infrastructure, technology, and solutions. CRC press.
	4.	Goodman, A. S., & Hastak, M. (2006). Infrastructure planning
	5.	handbook: planning, engineering, and economics. McGraw Hill. Grigg, N. S. (2012). Water, wastewater, and stormwater infrastructure management. CRC Press.
	6.	Hensher, D. A., Rose, J. M., Rose, J. M., & Greene, W. H. (2005).
	7	Applied choice analysis: a primer. Cambridge university press.
	7.	methods: analysis and applications.
	8.	Manheim, M. L. (1979). Fundamental of Transportation System
	9.	Maiysis. Massachusetts: MIT Press Meyer, M. D., & Miller, E. J. (2001). Urban transportation
		planning: a decision-oriented approach. McGrawHill Series in
	10	Transportation. Millar V (2015) Telecommunications infrastructure and the
	10.	urban landscape. Australian Planner, 52(1), 60–70.
		https://doi.org/10.1080/07293682.2015.1019756.
	11.	OECD. (2013). Policy Guidance for Investment in Clean Energy
	12.	Oppenheim, N. (1995). Urban travel demand modeling: from individual choices to general equilibrium: John Wiley and Sons.
	13.	Ortúzar, J. d. D., Willumsen, L. G. (2024). Modelling Transport. United Kingdom: Wiley.
	14.	Pazwash, H. (2016). Urban storm water management. Crc Press.
	15.	Pipattanasomporn, M., & Rahman, S. (2006). The telecommunication infrastructure: A model for optimum voice-data coverage. Utilities Policy, 14(4), 278–
		287. https://doi.org/10.1016/J.JUP.2006.01.002.
	16.	Saaty, T. L. (2008). Decision making with the analytic hierarchy process. International Journal of Services Sciences, 1(1), 83–98
	17.	Sinha, K. C., & Labi, S. (2011). Transportation decision making: Principles of project evaluation and programming. John Wiley &
	10	Sons. Tchobanoglous G. (2002) Solid waste management. Wiley, New
	10.	Jersey.
	19.	Train, K. E. (2009). Discrete choice methods with simulation.
	20.	Uddin, W., Hudson, W. R., & Haas, R. (2013). Public infrastructure
	<b>a</b> :	asset management. McGraw-Hill Education.
	21.	Vooga JH (1982) Multicriteria Evaluation for Urban and Regional Planning. TU Delft.