PL6163 System Design and Infrastructure 4.0

Module designation	System Design and Infrastructure 4.0
Semester(s) in which the module is taught	3 rd Semester
Person responsible for the module	Miming Miharja, Dr., ST, M.Sc.Eng.
Language	Indonesian
Relation to curriculum	Compulsory - elective for Innovation System and Smart Cities concentration
Teaching methods	Lecture and individual project
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	3 CU/ 5 ECTS
Required and recommended prerequisites for joining the module	-
Module objectives/inten ded learning outcomes	Students are able to create innovative solutions by evaluating design systems and digital infrastructure development concepts, as well as using information technology-based technical skills to support development financing.
Content	The course is divided into three sections. The first part introduces system design in Urban and Regional Planning. The second part provides concepts and types of system known in Urban and Regional Planning. The third part elaborates system approach role to enhance innovative policies on financing urban and regional planning. The second part elaborates concepts and methods on urban modelling and digital infrastructure development including geographic information systems (GIS), Big Data, and Infrastructure 2.0. The last part focuses to develop practical skills on analytical tools to address "real world" problems.
Examination forms	Written exam (mid-term and final), assignment
Study and examination requirements	Supporting activities: Laboratory practicum, class discussion, group work Scoring weights Mid-term exam: 30% Final exam: 40% Assignment: 30%

Reading list	 Sachs, Jeffrey, The age of sustainable development, , New York: Columbia University Press, Chicago, 2015
	2. Pelton, J, Smart Cities of Today and Tomorrow: Better Technology,
	Intrastructure and Security, , , 2018
	3. Satyam, A. and Calzada, I, The Smart City Transformations: The
	Revolution of The 21st Century, , , 2017
	4. Morley, M, The Public-Private Partnership Handbook: How to
	Waximize value from Joint Working, , , 2015
	5. Komininos, N, The Age of Intelligent Cities: Smart Environments
	and innovation-for-an strategies, , , 2015
	6. Guide to Financial Literacy vol 3. Understanding the Risks &
	Rewards of Public-Private Partnerships, , ,
	 Clark II, W. and Cooke, G, Smart Green Cities: Toward a Carbon Neutral World, 2014
	8. Batty M, Cities as Complex Systems: Scaling, Interaction, Networks, Dynamics and Urban Morphologies, In: Meyers R. (eds)
	Encyclopedia of Complexity and Systems Science, , Springer, New
	York, NY, 2009
	9. Philips R, Berke, David R. Godschalk, and Edward J. Kaiser, with
	Daniel A. Rounguez, Orban Land Use Planning, 5th edition