


Transportation System

		<b>SEMESTER LEARNING PLAN</b>			
		<b>DEPARTMENT: URBAN AND REGIONAL PLANNING</b>			
		<b>FACULTY: CIVIL, PLANNING, AND EARTH</b>			
<b>COURSES NAME</b>	<b>TRANSPORTATION SYSTEM</b>				
<b>COURSES CODE</b>	<b>DK184302</b>				
<b>SEMESTER</b>	<b>III</b>				
<b>CREDITS</b>	<b>3 SKS (4.8 ECTS)</b>				
<b>LECTURER</b>	<b>Siti Nurlaela, ST, M.COM, Ph.D</b>				
	<b>Ketut Dewi Martha Erli H, ST, MT</b>				
	<b>Nursakti Adhi P, ST, MSc</b>				
<b>COURSE METHODOLOGY</b>	BK12	BK 28	BK29	BK30	BK46
	Quantitative approaches and techniques of analysis	The concept of infrastructure	Standard of infrastructure services	Needs & supply analysis	Theory and Concept space
<b>PROGRAM LEARNING OUTCOME (PLO)</b>					
<b>SPESIFIC KNOWLEDGE</b>	1.1	Able to understand and apply the theoretical concept of urban and regional planning in the aspects of urban studies, regional studies, spatial science, data science & computer application, socio-political, environmental management, built environment design, infrastructure and transportation system, coastal studies, management, economics			
	1.2	Able to apply the techniques and processes of urban and regional planning in qualitative, quantitative, spatial modeling (geographic information systems) and presentation techniques			
<b>SPESIFIC SKILLS</b>	2.2	Able to utilize ICT in the management of data to produce information that is easily understood by the public and the decision makers			
<b>SPESIFIC KNOWLEDGE</b>	1.1	Able to understand and apply the theoretical concept of urban and regional planning in the aspects of urban studies, regional studies, spatial science, data science & computer application, socio-political, environmental management, built environment design, infrastructure and transportation system, coastal studies, management, economics			



	CPMK-3. Students are able to measure levels and patterns of accessibility and mobility to explain transportation issues		1									
	CPMK-4. Students are able to solve or produce solutions to transportation problems based on transportation system approaches in the LUTI framework.		1									
	CPMK-5. Students are able to communicate verbally, visually and in writing by utilizing ITK					1						
<b>MODULE</b>												
<b>1</b>	Introduction of transportation system											
<b>2</b>	Transportation system and land use											
<b>3</b>	Accessibility and mobility											
<b>4</b>	Case study: urban transportation-based system problems											
<b>5</b>	Special case: Introduction of coastal transportation problems with approach of transportation system											

**TRANSPORTATION SYSTEM COURSE LEARNING PLAN**  
**ODD SEMESTER OF ACADEMIC YEAR 2021–2022**

Week	Course Learning Outcome	Module Learning Outcome	Module	Learning Outcome	Scope	Learning Methods	Course Duration	Modes of Delivery (Presentation, task, discussion, quice, practice)	Grading Policy	Score (%)
1	2	3	4	5	6	7	8	9	10	11
Week 1	Students are able to apply the principles of transportation system approach in understanding urban / regional / coastal transportation problems	Students are able to understand the components of the transportation system and the interrelationships between components of the transportation system	Introduction of transportation system	Students are able to understand the concepts / theoretical, definitions and basic principles in the transportation system.	Discussion about SAP, evaluation, tasks. Introduction of transportation system.	M1	100	Lecture, Discussion	Individual Activeness	5%
				Students are able to understand the system analysis	System approach, system components.	M1	60	Lecture, Discussion	Individual Activeness	

				approach as a systematic framework for solving transportation problems.						
		Students are able to identify transportation problems (city / region / coast) with approach of transportation system		Students are able to understand how a system operates.	Systems analysis strategy	M1	60	Lecture, Discussion	Individual Activeness	
				Students are able to understand examples of application of system approach in solving transportation problems	Examples of system analysis applications	M1, M7	100	Lecture, Discussion	Individual Activeness	
Week 2	Students are able to explain the role of transportation system with	Students are able to identify transportation problems (city / region / coast)	Transportation system and land use	Students are able to identify the components of the	Activity system, network system, movement system (moda),	M1	100	Lecture, Discussion	Individual Activeness	

	LUTI perspective in forming space structure and its relation to spatial pattern.	with approach of transportation system		transportation system	institutional system					
				Student are able to understand the characteristics of transportation system and its relation with the layout	Components, standards and characteristics of the transport system: network and movement (mode).	M1, M7	60	Lecture, Discussion	Individual Activeness	
				Students are able to apply applicable standards in understanding the inter-component linkages in the transport system	Components, standards, and characteristics of land use systems: activity systems.	M1, M7	60	Lecture, Discussion	Individual Activeness	

	Students are able to apply LUTI framework in identifying transportation solution to transportation problem	Students are able to analyze transportation problems in LUTI framework		Students are able to understand the various LUTI framework and examples of its application	Framework approach land use and transportation integration or LUTI	M1	100	Lecture, Discussion	Individual Activeness	
Week 3				Students are able to understand transportation problems with LUTI framework	Principles of land use and transportation linkage and examples of its application in solving transportation problems	M1	160	Lecture, Discussion	Individual Activeness	
					Colaborative group task based on problems: identifying transportation problems and	M1, M7, M4	160	Discussion, group assignment, explanation of group assignment paper 1 preparation of transportation	Task 1 : Paper 1	20%

					explaining the components of the transport system to understand transportation problems using the LUTI framework			problem analysis with transportation system approach using LUTI framework		
Week 4	Students are able to measure accessibility and mobility based on transportation problems	Students are able to identify appropriate accessibility and mobility measurement methods based on transportation problems	Accessibility and mobility	Students are able to understand the concepts of accessibility and mobility	Explanation of basic definitions and concepts of accessibility and mobility	M1	160	Lecture, Discussion	Individual Activeness	
Week 4-5				Students are able to identify and differentiate different types of accessibility and mobility measurement	Measures of accessibility and mobility methods	M1, M7	320	Lecture, Discussion	Individual Activeness	



				methods						
Week 5				Students are able to measure accessibility and mobility	Model approach	M1	160	Lecture, Discussion	Task 1 Submission	
Week 6		Students are able to understand data types, collect data, and process data in calculating accessibility and mobility based on transportation problems		Students are able to measure accessibility and mobility	Understanding of data input	M1, M7	160	Lecture, Discussion, Study Case Based on Problems	Individual / Group Activeness	
					Understanding Data Process	M1, M7	160		Individual / Group Activeness	
					Analysis and measurement of accessibility and mobility	M1, M7			Individual / Group Activeness	
Week 7					Land Use Survey	M1, M7, M4	600	survey and assistance	Individual / Group Activeness	

					Agency Survey	M1, M7, M5	600	survey and assistance	Individual / Group Activeness	
					Survey of accessibility indicators	M1, M7, M6	600	survey and assistance	Individual / Group Activeness	
					Survey of mobility indicators	M1, M7	600	survey and assistance	Survey Report	20%
Week 8 - 12	Students are able to solve or produce solutions to transportation problems based on transport system approach in LUTI framework	Students are able to formulate solutions to transportation problems with system approach inaccessibility / mobility perspective	Case study: urban transportation-based system problems	Students understand system approaches to generate solutions to transportation problems	Special case: Introduction of TOD as a system-based transportation problem solution					
				Students are able to measure accessibility and mobility	Practicum measurement of accessibility measurement	M1, M7, M4	600	Practice, Assistance, Group Discussion	Individual / Group Activeness	
					Practicum measurement of	M1, M7, M4	600	Practice, Assistance,	Individual / Group Activeness	

					mobility measurement			Group Discussion		
				Students are able to formulate solutions to transportation problems in accessibility / mobility perspective	Practicum/Studio	M1, M7, M4	480	Practice, Assistance, Group Discussion	Individual / Group Activeness	
Week 13	Students are able to communicate verbally, visually and in writing using ITK			Students are able to formulate solutions to transportation problems in accessibility / mobility perspective	Group Presentation	M1, M7, M5	480	Presentation, Discussion	Presentation	15%
Week 14	Able to apply logical, critical, systematic, and innovative thinking in the context of development or implementation of science and				Quiz	M7	100	Evaluation	Quiz	20%

	technology that cares and implements the value of humanities in accordance with their areas of expertise									
Week 15	Students are able to identify solutions to coastal transportation problems with system approach	Students are able to identify solutions to coastal transportation problems with system approach	Special case: Introduction of coastal transportation problems with approach of transportation system	Students are able to understand the characteristics of coastal transportation problems with system approach	Special case: Introduction of coastal transportation problems with approach of transportation system	M1, M7	160	Lecture, Discussion		
				Students are able to recognize system-based transportation approaches to coastal						

				transport issues						
Week 16	Able to apply logical, critical, systematic, and innovative thinking in the context of development or implementation of science and technology that cares and implements the value of humanities in accordance with their areas of expertise				Lectures conclusion and group task assignments Papers 2	M1	100	Lecture, Discussion	Group Paper 2	20%

<b>EVALUATION</b>					
<b>EVALUATION TYPE</b>		<b>Assessment Nature</b>	<b>Weight</b>	<b>Form of Assignment</b>	<b>Deadline</b>
Evaluation 1 : Weekly Presentation and Discussion		Group with individual assessment (10%) and group (15%)	25%	PPT	Weekly, from week 2 up to week 9
				Presentation and Discussion	

Evaluation 2 : Major task in form of presentation	Group with individual assessment ( 25%)	25%	PPT, Presentation and Discussion	Week 13
Evaluation 3 : Major task in form of of paper	Group with individual assessment ( 25%)	25%	Paper	Week 16
Quiz	Individu	25%	Quiz	Week 14

## EVALUATION 1 WEEKLY PRESENTATION AND DISCUSSION

<b>Course Name</b>	DK184302 Transportation System
Credits	3 credits
Module ( Subject Matter)	<p>Module 1 (Transportation System and Land Use or LUTI)</p> <ul style="list-style-type: none"> <li>- Week 2 : Describe activity system, network, the movement, the institutional and the examples.</li> <li>- Week 3 : Describes one of the framework that is used to describe land use and transportation linkages (LUTI) and examples of its application.</li> </ul> <p>Module 2 (Accessibility and mobility)</p> <ul style="list-style-type: none"> <li>- Week 4: Describes accessibility definitions according to the experts. Discussing examples of the use of those concepts and describes methods and sample measurements of accessibility.</li> <li>- Week 5: explain the definitions of mobility according to the experts. Discussing examples of the use of those concepts and describes methods and sample measurement of mobility.</li> </ul> <p>Module 3 (TOD concept)</p> <ul style="list-style-type: none"> <li>- Week 9: Describe concept of TOD, character TOD, and its role.</li> </ul>
The Goal of Learning Module	<ul style="list-style-type: none"> <li>• Students were able to understand the components of the transportation system and the linkages between components of the transportation system</li> <li>• Students are able to identify the problems of transportation (City/region/coastal) with the approach of the transport system</li> <li>• The student is able to understand this aspect of LUTI in shaping spaces</li> <li>• Students are able to analysis the problems of transport framework LUTI</li> <li>• Students are able to identify methods of measurement accessibility and mobility-based transportation problem</li> <li>• Students understand the system approaches to generate solutions to the transport problems (the case of the TOD)</li> </ul>
The Purpose Learning of Weekly Presentation and Discussion	<ul style="list-style-type: none"> <li>• Students were able to understand the components of the transportation system and the linkages between components of the transportation system</li> <li>• Students are able to identify the problems of transportation (City/region/coastal) with the approach of the transport system</li> <li>• The student is able to understand this aspect of LUTI in shaping spaces</li> <li>• Students are able to analysis the problems of transport</li> </ul>

	<p>framework LUTI</p> <ul style="list-style-type: none"> <li>• Students are able to identify methods of measurement accessibility and mobility-based transportation problem</li> <li>• Students understand the system approaches to generate solutions to the transport problems (the case of theTOD)</li> </ul>
Dept Level of Weekly Presentation and Discussion (C1 up to C6)	C4
Weekly Presentation and Discussion Task Detail	The description of tasks and assessment criteria is attached bellow



### A. ASSIGNMENT TYPE

Evaluation I is form of weekly presentation and discussion task group where students asked to learning, understanding, making a presentationslide, presenting, and note conclusion each weekly topics from week 2 until 9

### B. ASSIGNMENT MATERIAL

Task material include module 1, 2, 3

- Transportation System and Land Use
- Accessibility and Mobility concept
- TOD concept

### C. ASSIGNMENT IMPLEMENTATION

- Task done in a group. Draft Evaluation task I presented in the form of a Roundtable Discussion will be facilitated by a Faculty Lecturer
  1. Each group is asked to provide a copy of the materials exposure (ppt) with the distribution of 1 copies for lecturers and some copiesto other group members. Each participant is matakuliah expected to participate in the discussion.
- Students are advised to conduct consultation/teaching lecturer before assisting to the preparation of draft/finalization task.
- The exposure of the presentation done for 20 minutes, 20 minutes for study/discussion and 20 minutes of questioning.
- At the session, the discussion/deepening class member can provide comments/feedback.
- In the question and answer session, members of the class can give you questions.
- An active class members can obtain the value of the liveliness of the individual.
- One member of the group plays the role of the meeting discussion.
- After it was presented and discussed, then the material PPT, notulensi discussion and conclusion handed in soft copy format ( one file pdf, code name weekly assignment\_ group topic\_ sistran 2018) to email : [sitnurlael0@gmail.com](mailto:sitnurlael0@gmail.com) ( according name of the lecturer teachtopic every week)
- After the end of class, students write lesson learned and collected in the time of discussion all 300 words with write lesson experienceand student number.

### D. ASSESSMENT CRITERIA (15% group, 10% individu)

Dimension	Very Good	Good	Average	Bad	Very Bad	Score
<b>Technique of Presentation</b>	The presentation was organized with showing fact that	The presentati on was organized and showing fact that	The presentation has focus pointand showing some evidencethat support the	The presentat ion has focus point, but evidence were	There's no spesific organization .Facts are notused to support their	

	supported by example that already analyzed based on concept	makesure to support the conclusions	conclusions	insufficient to used for makea conclusions.	statement	
	(10-8)	(6-8)	(4-5)	(3-2)	(0-1)	
<b>Content</b>	Content that can be inspire listener to develop their minds.	Has an accurate and complete presentati on.The listener has a new knowledge about that topics	Has an accurate content but notcomplete. The listener less active to discuss that topics	The content was less accurate because there's no data and fact that supports it	The content are not accurate and very common. Listener didn'tget any lessons from this presentatio n	
	(10-8)	(6-8)	(4-5)	(3-2)	(0-1)	
<b>Discussion</b>	The right argumentati onwith example or the fact	The right argumenta tionbut lacking of the fact	The lack of argumentation but have fact or example	The lack of argument ationand not have example	Argumentati onis wrong	

**EVALUATION 2 GROUP TASK BASED TOD CASE STUDY IN FORM OF PRESENTATION AND INDIVIDUAL ASSESSMENT**

<b>Course Name</b>	DK184302 Transportation System
Credits	3 credits
Module (Subject Matter)	Module 1 (LUTI system) Module 2 (Measurement of accessibility and mobility) Module 3 (TOD)
The Goal of Learning Module	<ul style="list-style-type: none"> <li>• The student is able to communicate ideas verbally, visual and written by using ICT</li> <li>• Students are able to identify solutions to the transport problems with systems approach</li> <li>• Students are able to identify methods of measuring accessibility and mobility-based transportation problem</li> </ul>
Dept Level Evaluation 2 (C1 up to C6)	C4 (Analysis)
Evaluation 2 Details	The description of tasks and assessment criteria is attached bellow

**A. ASSIGNMENT TYPE**

Evaluation 2 is Group presentation task with individual assessment. In this task the student deepen TOD case studies (or the potential of theTOD) is one of the transit points in Surabaya with field observations to recognize the issue of transportation. Next, students identify the issue become an issue or a question of research. Students design a process research to answer the question such research, which involves the understanding of the aspects of the problem with the viewpoint of the concept of LUTI, the concept of accessibility/mobility, and the concept of TOD.

**B. ASSIGNMENT MATERIAL**

Task material include module 1, 2, 3

- Transportation System and Land Use
- Accessibility and Mobility concept
- TOD concept

**C. ASSIGNMENT IMPLEMENTATION**

- Task done in a group. The number of members of the Group of 4-5 people.
- Each group of free transit point case study one in Surabaya.
- Each group then determine the issue. The question or issue associated with discussion of module 1, 2 and/or 3.
- The task begins with reviewing the field (observation) case studies. Students then identify the issue, putting together a survey designand doing the survey process.
- The determination of a case study done on week 3.
- The preparation of the survey and design asistensinya carried out in week 7.
- Field data collection or surveys conducted on week 8.

- The data processing is done in the form of assisting and teaching, in week 10, 11 and 12.
- PRESENTATION of the ACTIVITIES CARRIED OUT in WEEK 13.

**D. ASSESSMENT CRITERIA (25% individu)**

Dimension	Very Good	Good	Average	Bad	Very Bad	Score
<b>Technique of Presentation</b>	The presentation was organized with showing fact that supported by example that already analyzed based on concept	The presentation was organized and showing fact that makesure to support the conclusions	The presentation has focus pointand showing some evidencethat support the conclusions	The presentation has focus point, but evidence were insufficient to used for makea conclusions.	There's no spesific organization .Facts are notused to support their statement	
	(10-8)	(6-8)	(4-5)	(3-2)	(0-1)	
<b>Content</b>	Content that can be inspire listener to develop their minds.	Has an accurate and complete presentation.The listener has a new knowledge about that topics	Has an accurate content but notcomplete. The listener less active to discuss that topics	The content was less accurate because there's no data and fact that supports it	The content are not accurate and very common. Listener didn'tget any lessons from this presentation	
	(10-8)	(6-8)	(4-5)	(3-2)	(0-1)	
<b>Discussion</b>	The right argumentationwith example or the fact	The right argumentationbut lacking of the fact	The lack of argumentation but have fact or example	The lack of argumentationand not have example	Argumentationis wrong	

### EVALUATION 3 TASK GROUP BASED ON TOD CASE STUDY IN FORM OF PAPER

Course Name	DK184302 Transportation System
Credits	3 credits
Module ( Subject Matter)	Module 1 (LUTI system) Module 2 (Measurement of accessibility and mobility) Module 3 (TOD)
The Goal of Learning Module	<ul style="list-style-type: none"> <li>• The student is able to communicate ideas verbally, visual and written by using ICT</li> <li>• Students are able to identify solutions to the transport problems with systems approach</li> <li>• Students are able to identify methods of measuring accessibility and mobility-based transportation problem</li> </ul>
Dept Level Evaluation 3 (C1 up to C6)	C4 (Analysis)
Evaluation 3 Details	The description of tasks and assessment criteria is attached bellow

#### A. ASSIGNMENT TYPE

Evaluation 3 is form of group report paper. In this task the student deepen TOD case studies (or the potential of the TOD) is one of the transitpoints in Surabaya with field observations to recognize the issue of transportation. Next, students identify the issue become an issue or a question of research. Students design a process research to answer the question such research, which involves the understanding of the aspects of the problem with the viewpoint of the concept of LUTI, the concept of accessibility/mobility, and the concept of TOD.

#### B. ASSIGNMENT MATERIAL

Task material include module 1, 2, 3

- Transportation System and Land Use
- Accessibility and Mobility concept
- TOD concept

#### C. ASSIGNMENT IMPLEMENTATION

- Assignment are done in groups. The number of group members is 4-5 people.
- Each group is free from one case study of a transit point in Surabaya.
- Each group then determine the issue. The question or issue associated with discussion of module 1, 2 and/or 3.
- The task begins with reviewing the field (observation) case studies. Students then identify the issue, putting together a survey design and doing the survey process.
- The determination of a case study done on week 3.
- The preparation of the survey and design asistensinya carried out in week 7.
- Field data collection or surveys conducted on week 8.
- The data processing is done in the form of assisting and teaching, in week 10, 11 and 12.
- The collection of reports in the form of a paper done at 16 weeks.
- The task is typed in on the paper A4 portrait, spaced 1 – 1.5, maximum number of pages 15 pages accompanied attachment design survey and data collection of primary/secondary.
- Softcopy of task in "pdf" format and in conjunction with the reviewed journal collected in the

form of the CD collectively (1 class 2 DVD). Organizing files in CD as follows: one group one folder with the name and the NRP are arranged in sequence with the file name: the NAME of the Task\_topic\_group the form of NRP\_Sistran2018).

- The order paper is composed of:

Chapter 1: introduction, outlining the theoretical importance of facts or systems approach in identifying problems of transport LUTI. Empirical facts outlining the issues of transport case study one of the transit points in the city of Surabaya.

Chapter 2: review of the literature: literature 3 textbook/scholarly journal/scientific articles about theoretical foundation of LUTI, TOD, and the concepts of accessibility/mobility. Online material (amount of non-specified) on the same topic.

Chapter 3: the design of the survey (the data needs), obtain data, process data.

#### D. ASSESSMENT CRITERIA (25% Group)

Sub Bab	81-100	71-80	66-70	51- 65	0-50
Introduction	The Empirical facts and theoretical concept are completed and very relevant, the urgency of the problem is high	The Empirical facts and theoretical concept are completed and very relevant, but the urgency is not high	The empirical facts and theoretical concept are stated but not relevant and urgent	The empirical facts and theoretical concept is not completed, not relevant and not urgent	Empirical facts and theoretical concept is not stated and could not for the research question
Literature Review	Literature review substance is completed and has stated more than the reference, the literature synthesis is completed and suitable	Literature review substance is stated accordingly to TOR, the literature synthesis is suitable	Suitable for the topic but not completed, the literature synthesis is unsuitable	Unsuitable for the topic and not completed, the literature synthesis is irrelevant	Not completed and irrelevant, the literature synthesis is not completed
Methodology	Data needed, how to obtain data and techniques to process data precisely and explained in detail	Data needed and how to get the right data but the technique of processing data is not right	How to get the right data, the data needed is less, the data processing technique is not right	Data needed, how to obtain data and data processing techniques is not right	Data needed, how to obtain data and data processing techniques are not appropriate
Data and analysis	Complete data, analysis right with the appropriate interpretation	Complete data, precise analysis without interpretation	Complete data with inappropriate analysis	Complete data but not suitable and without analysis	Data is incomplete and not suitable and without analysis

Conclusion	The quality of conclusions is appropriate according to the results of the analysis and answers the research objectives	The quality of conclusions is appropriate according to the results of the analysis but does not answer the research objectives	The quality of conclusions is appropriate according to the results of the analysis but does not answer the research objectives	Conclusion quality is not in accordance with the analysis and does not answer the research objectives	The quality of conclusions is very inappropriate
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### EVALUATION 4 (QUIZ)

<b>Course Name</b>	DK184302 Transportation System
Credits	3 credits
Module ( Subject Matter)	Module 1 (LUTI system) Module 2 (Measurement of accessibility and mobility) Module 3 (TOD)
The Goal of Learning Module	<ul style="list-style-type: none"> <li>• The student is able to communicate ideas verbally, visual and written by using ICT</li> <li>• Students are able to identify solutions to the transport problems with systems approach</li> <li>• Students are able to identify methods of measuring accessibility and mobility-based transportation problem</li> </ul>
Dept Level Evaluation 4 (C1 up to C6)	C4 (Analysis)
Evaluation 4 Details	Determined later. The weight of individual values 25%

#### ASSESSMENT CRITERIA

		Essay question	81-100	71-80	66-70	51- 65	0-50	
<b>ADVANCE</b>	<b>INTERMEDIATE</b>	<b>BASIC DURP</b>	Complete	All keywords are answered with the right explanation with clear paths accompanied by examples	All keywords are answered with the right explanation but the plot is not clear	The keywords are partially answered with the right explanation without flow	Keywords are less precise, explanations that are less precise and without flow	There are no keywords and explanations
			Creativity	Creativity of the answers are high and very precise	Creativity of the answers are high but not right	Low and inaccurate creativity	The answer is too general	The answer is too general and not right
			Comprehensive	Comprehensive explanation and can relate to other aspects supported by the facts	comprehensive explanation and can relate to other aspects without supporting facts	Comprehensive explanation but does not explain the relationship with other aspects	Less comprehensive explanation	Non-comprehensive explanation

### Type of Individual Exam Questions / Quiz

Intermediate	
Applying	Analyzing
Demonstrate	Separating
Calculate	Connecting
Connect	Choose
Prove	Compare
Produce	Make a diagram/ scheme
Show	Show relationship
Complete	
Provide	
Find	