SYLLABUS

TLI 522 Perencanaan Sistem Persampahan
(Solid Waste System Planning)

Lecturers:
Dr. Eng. Slamet Raharjo
Rizki Aziz, Ph.D

STUDY PROGRAM OF ENVIRONMENTAL SANITATION INFRASTRUCTURE
FACULTY OF ENGINEERING
UNIVERSITAS ANDALAS
2020

	SYLLABUS **SEMESTER**	No.Dok : ..... Revisi : .....
	TLI 522 (Solid Waste System Planning)	Tanggal : June 2020 Halaman:
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1. Lecture Information

Study Program Name : Environmental Sanitation Infrastructure
Lecture Name : Solid Waste System Planning
Lecture Code : TLI 522
Category : Elected
Unit : 2 units

Year	: Year 2
Semester	: 2 (two)
Prasyarat	: -
Status (required/elective)	: Elective
Lecturers	: Dr. Eng. Slamet Raharjo Rizki Aziz, Ph.D

2. Description of Lecture

The aim of this module is to provide basic theory on solid waste and guidance to do solid waste system planning for a municipality.

3. Learning Achievement of Study Program

- Mastering the theory of engineering science, design engineering, methods and the latest techniques needed for the analysis and design of environmental management efforts;
- Mastering the contextual and current interdisciplinary approach related to the design of integrated environmental management systems.
- Able to solve engineering and technological problems and design systems, processes and components in environmental management efforts including management of drinking water, wastewater, solid waste, settlement drainage, liquid, solid and gas waste control systems, air pollution control and occupational health and safety (OHS) by utilizing other fields of science (if needed) and taking into account economic, health and public safety, cultural, social and environmental factors;

4. Learning Achievement of Lecture

1. Explain the source and classification of solid waste
2. Analyze the generation, composition and characteristic of solid waste
3. Explain the management of municipal solid waste and minimization of solid waste
4. Analyze and evaluate the storage and collection system of municipal solid waste (MSW)
5. Analyze and evaluate the transfer and processing system of MSW
6. Plan and present the scenario of MSWplan (case study)
7. Plan and present the storage, collection and processing system of MSW (case study)
8. Analyze and evaluate the transport system of MSW
9. Analyze and evaluate the disposal system of MSW
10. Explain non technical aspects of MSW management
11. Plan and present the transport system of MSW (case study)
12. Plan and present the disposal system of MSW (case study)
13. Plan and present non technical aspects of MSW management (case study)

5. Description of Lesson Plan

Week	Indicator of Learning Achievements of Subjects	Topics	Method of Learning	Course Time	Assignment and Evaluation	Reference
1	To be able to explain about the source and classification of solid waste, the impact of solid waste to environment	Introduction to source and classification of solid waste	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
2	To be able to analyze solid waste generation, composition and characteristic	Analysis of generation, composition and characteristic of solid waste	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
3	To be able to explain the management system of solid waste and minimization od solid waste	Introduction to management system of municipal solid waste (MSW) and minimization of solid waste	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
4	To be able to analyze the MSW storage and collection system	Analysis of MSW storage and collection system	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
5	To be able to analyze the MSW transfer and processing system	Analysis of MSW transfer and processing system	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
6	To be able to explain scenarios planning in municipal solid waste management	Scenario planning of MSW management	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
7	To be able to plan the MSW storage, collection and processing system	Planning of MSW storage, collection and processing system	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
8	Mid-term Examination					

Week	Indicator of Learning Achievements of Subjects	Topics	Method of Learning	Course Time	Assignment and Evaluation	Reference
9	To be able to analyze MSW transport system	Analysis of MSW transport system	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
10	To be able to analyze MSW disposal system	Analysis of MSW disposal system	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
11	To be able to explain the non technical aspects of MSW management	Introduction to non technical aspects of MSW management	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
12	To be able to plan the MSW transport system	Planning of MSW transport system	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
13	To be able to plan the MSW disposal system	Planning of MSW disposal system	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
14	To be able to plan the non technical aspects on MSW management	Planning of MSW non technical aspects of MSW management	Lecture and discussion	2x50 minutes	Work individual and/ in groups	
15	To be able to present the planning of MSW management system	Planning of MSW management system	Lecture and discussion	2x50 minutes	Presentation of case study of the MSW management system plan	
16	Final Examination					

6. References

1. Tchobanoglous, et. Al (1993).: Integrated Solid Waste Management, McGraw-Hill
2. Tchobanoglous, G and Kreith, F (2002) : Handbook of Solid Waste Management, 2 nd edition, McGraw-Hill

3. Current Anaerobic Digestion Technologies Used for Treatment of Municipal Organic Solid Waste: California Integrated Waste Management Board, March 2008.
4. P. Jayarama Reddy, Municipal Solid WasteManagement, Processing, Energy Recovery, Global Examples: Taylor & Francis Group, LLC, 2011
5. C. Ludwig S. Hellweg S. Stucki, Municipal Solid Waste Management Strategies and Technologies for Sustainable Solutions: Springer-Verlag Berlin Heidelberg 2003
6. Damanhuri, E danPadmi, T (2016): PengelolaanSampahTerpadu, PenerbitITB
7. Other related scientific articles

7. Annex

Scoring Instrument: Mid-term examination : 35%; Final Examination: 35%; Assignment: 30%