


## **SYLLABUS**

### **TLI 661 Manajemen Proyek Infrastruktur Sanitasi (Project Management for Sanitation Infrastructure)**

**Lecturers:  
Dr.Eng Denny Helard  
Dr. Puti Sri Komala**

**MASTER STUDY PROGRAM OF ENVIRONMENTAL ENGINEERING  
FACULTY OF ENGINEERING  
UNIVERSITAS ANDALAS  
2020**

	<b>SYLLABUS SEMESTER</b>	No.Dok : .....
	<b>(TLI 661 Project Management for Sanitation Infrastructure)</b>	Revisi : .....
		Tanggal : June 2020 Halaman:
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<b>SYLLABUS</b>		
<b>1. Lecture Information</b>		
Study Program Name : Environmental Sanitation Infrastructure		
Lecture Name : Project Management for Sanitation Infrastructure		
Lecture Code : TLI 661		
Category : Required Study Program		
Unit : 3units		

Year	: Year 1
Semester	: 1 (one)
Prerequisite	: -
Status (required/elective)	: Required
Lecturers	: Dr. Eng. Denny Helard Dr. Puti Sri Komala Dr. Eng. Slamet Raharjo

## **2. Description of Lecture**

The aim of this module is to be able to develop a good/bankable project and its management.

## **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**

After successful completion of the module, participants will be able to:

1. Explain project management cycle and key elements of project planning;
2. Apply standard tool(s) for context, stakeholder and problem analysis to plan a sanitation project/proposal;
3. Apply Theory of change approach to develop a sanitation project/proposal;
4. Organise and develop project implementation plan;
5. Organise and develop project monitoring, evaluation and learning (MEL) plan;
6. Use MS Project for developing a sanitation project plan.

## 5. Description of Lesson Plan

Week	Indicator of Learning Achievements of Subjects. Student are able to:	Topics	Method of Learning	Course Time	Assignment and Evaluation	Ref.
1	<ul style="list-style-type: none"> <li>Name the principles and elements of the project management cycle and explain the difference between operational and project management</li> <li>Give examples for different types of projects and matching project management approaches</li> <li>Understand the need, the process and the elements of a systematic, facts-based and results-oriented approach to project development</li> </ul>	<p>Project management cycle. Introduction to project management in sanitation:</p> <ul style="list-style-type: none"> <li>What is project management?</li> <li>Outline of key aspects of project management (stakeholders, people, risk management, budget, reporting, monitoring and evaluation.....)</li> </ul> <p>Introduction to key (universal) elements of developing a project proposal, core baseline analyses: context, stakeholder and problem analysis.</p>	Lecture and discussion	3x50 minutes	Work individual and/ in groups	
2	<ul style="list-style-type: none"> <li>Understand the purpose and elements of a context analysis tool and application.</li> <li>Apply the context analysis tool to the case study</li> </ul>	<ul style="list-style-type: none"> <li>Workshop - Explain context analysis and tools to carry out <b>context analysis</b>.</li> <li>Group work - provide clarifications as required, monitor the group work and summarize the outcomes in plenary</li> </ul>	Lecture and discussion. Work in groups as per the distributed roles	3x50 minutes	Work individual and/ in groups	
3	<ul style="list-style-type: none"> <li>Summarize the purpose and generic elements of a project stakeholder analysis.</li> <li>Execute a basic stakeholder mapping and ranking.</li> </ul>	<ul style="list-style-type: none"> <li>Workshop - Explain the theory and approaches used <b>stakeholder analysis</b>.</li> <li>Group work - provide clarifications as required, monitor the group</li> </ul>	Lecture and discussion. Work in groups as per the distributed roles.	3x50 minutes	Work individual and/ in groups	

Week	Indicator of Learning Achievements of Subjects. Student are able to:	Topics	Method of Learning	Course Time	Assignment and Evaluation	Ref.
	<ul style="list-style-type: none"> <li>Attribute project-relevant characteristics to stakeholders based on background information</li> </ul>	work and summarize the outcomes in plenary.				
4	<ul style="list-style-type: none"> <li>Understand the purpose and elements of a <b>problem analysis tool and application</b>.</li> <li>Apply the <b>problem analysis tool</b> to the case study.</li> </ul>	<ul style="list-style-type: none"> <li>Workshop - Provide information and tools for carrying out <b>problem analysis</b>.</li> <li>Group work - provide clarifications as required, monitor the group work and summarize the outcomes in plenary.</li> </ul>	Lecture and discussion. Work in groups as per the distributed roles.	3x50 minutes	Work individual and/ in groups	
5	<ul style="list-style-type: none"> <li>Name and give examples for types of <b>project results and types of project goals</b>.</li> <li>Explain the relationship between the nature of a project and the type of goals that should be set.</li> </ul>	<ul style="list-style-type: none"> <li>Activating lecture - introduction and approaches of <b>results-based project management</b>.</li> </ul>	Lecture and discussion	3x50 minutes	Work individual and/ in groups	
6	<ul style="list-style-type: none"> <li>Summarize the notion of conditions and interim results as formative elements of a <b>Theory of Change in projects</b> involving social and behavioural changes.</li> <li>Compile a basic conditions map for a sanitation project under consideration of context factors.</li> </ul>	<ul style="list-style-type: none"> <li>Workshop - Explain elements of "<b>theory of change</b>", mapping conditions and approach to be used in the exercise.</li> <li>Group work - Give instructions and feedback, summarize outcomes in plenary</li> </ul>	Listen and ask for clarification. Carry out the group work exercise	3x50 minutes	Work individual and/ in groups	

Week	Indicator of Learning Achievements of Subjects. Student are able to:	Topics	Method of Learning	Course Time	Assignment and Evaluation	Ref.
	<ul style="list-style-type: none"> <li>Discuss the usefulness of indicators identified in the planning stage for project progress and outcome monitoring at later stages.</li> </ul>					
7	<ul style="list-style-type: none"> <li>Illustrate how the link between project activities and outcomes can be modelled using a causal (visual) pathway</li> <li>Select a path of change from a conditions map and make explicit which outcomes and interventions are part of the path of change and which are not.</li> </ul>	<p>Theory of Change - select a path of change:</p> <ul style="list-style-type: none"> <li>Workshop - Explain the theory "path of change" and approach "to be used in the exercise</li> <li>Group work - Give instructions and feedback, summarize outcomes in plenary</li> </ul>	<ul style="list-style-type: none"> <li>Listen and ask for clarification.</li> <li>Carry out the group work exercise.</li> </ul>	3x50 minutes	Work individual and/ in groups	
8	<ul style="list-style-type: none"> <li>Recognize the role of assumptions in planning processes and the importance of making assumptions explicit as precondition to effective learning.</li> <li>Check causal links in a path conditions map for hidden assumptions.</li> <li>Construct a basic narrative to link project interventions to intended outcomes.</li> </ul>	<p>Theory of Change - Assumptions and justifications:</p> <ul style="list-style-type: none"> <li>Workshop - Explain the theory and approach to be used in the exercise.</li> <li>Group work - Give instructions and feedback, summarize outcomes in plenary.</li> </ul>	<ul style="list-style-type: none"> <li>Listen and ask for clarification.</li> <li>Carry out the group work exercise.</li> </ul>	3x50 minutes	Work individual and/ in groups	

Week	Indicator of Learning Achievements of Subjects. Student are able to:	Topics	Method of Learning	Course Time	Assignment and Evaluation	Ref.
9	<ul style="list-style-type: none"> <li>Understand the purpose and elements of <b>the options analysis and multi-criteria assessment tools and application.</b></li> <li>Apply the risk assessment and mitigation framework to the case study.</li> </ul>	<b>Options Analyses, Multi-Criteria Analyses:</b> <ul style="list-style-type: none"> <li>Workshop - Introduce options analysis and multi-criteria assessment and tools.</li> <li>Group work - Give instructions, monitor the group work and summarize outcomes in plenary.</li> </ul>	<ul style="list-style-type: none"> <li>Listen and ask for clarification.</li> <li>Carry out the group work exercise.</li> </ul>	3x50 minutes	Work individual and/ in groups	
10	<ul style="list-style-type: none"> <li>Reframe a sanitation project as social intervention and explain the related need for stakeholder engagement, change management and acceptance strategies for sanitation projects.</li> <li>Prioritize stakeholders in a stakeholder map and construct basic engagement strategies based on existing context information.</li> </ul>	<b>Stakeholder management:</b> <ul style="list-style-type: none"> <li>Activating lecture – introduction to stakeholder/change management and strategies.</li> <li>Group work - Give instructions and feedback, summarize outcomes in plenary</li> </ul>	<ul style="list-style-type: none"> <li>Listen and ask for clarification.</li> <li>Carry out the group work exercise.</li> </ul>	3x50 minutes	Work individual and/ in groups	
11	<ul style="list-style-type: none"> <li>Understand the purpose and elements of a risk assessment and mitigation framework and how to apply this.</li> <li>Apply the framework to the case study</li> </ul>	<b>Risk assessment and mitigation:</b> <ul style="list-style-type: none"> <li>Workshop - Explain risk analysis, planning risk response strategies as summary check for project planning.</li> <li>Group work - Give instructions and feedback, summarize outcomes in plenary</li> </ul>	<ul style="list-style-type: none"> <li>Listen and ask for clarification.</li> <li>Carry out the group work exercise.</li> </ul>	3x50 minutes	Work individual and/ in groups	



<b>Week</b>	<b>Indicator of Learning Achievements of Subjects. Student are able to:</b>	<b>Topics</b>	<b>Method of Learning</b>	<b>Course Time</b>	<b>Assignment and Evaluation</b>	<b>Ref.</b>
12	<ul style="list-style-type: none"> <li>Understand the importance of a coherent and consistent project plan, meaning that consistency exists between narratives and schematics describing the project (the results based management frameworks, like ToC and log frame) and the tools to track progress within those frameworks (the M&amp;E system).</li> <li>Apply coherence / consistency check.</li> </ul>	Finalise project plan: <ul style="list-style-type: none"> <li>Workshop - Explain importance and how to make a consistent project plan and set up M&amp;E system and explain exercise.</li> <li>Group work - Facilitate in group work.</li> </ul>	<ul style="list-style-type: none"> <li>Listen and ask for clarification.</li> <li>Carry out the group work exercise.</li> </ul>	3x50 minutes	Work individual and/ in groups	
13	<ul style="list-style-type: none"> <li>Select an organizational model for a project based on criteria.</li> <li>Describe the responsibilities of generic project roles.</li> <li>Implement basic team management techniques in a working context.</li> </ul>	Project Human Resources: <ul style="list-style-type: none"> <li>Workshop - Explain the theory and approach to be used in the exercise.</li> <li>Group work - Give instructions and feedback, summarize outcomes in plenary.</li> </ul>	<ul style="list-style-type: none"> <li>Listen and ask for clarification.</li> <li>Carry out the group work exercise.</li> </ul>	3x50 minutes	Work individual and/ in groups	
14	<ul style="list-style-type: none"> <li>Explain how monitoring relates to evaluation and learning towards operational excellence on the one hand and to learning towards more effective and efficient achievement of development results on the other (including</li> </ul>	Activating lecture - Introduction to monitoring, evaluation and learning (MEL) frameworks and explain differences between monitoring for results and implementation	<ul style="list-style-type: none"> <li>Attentively listen Q&amp;A</li> </ul>	3x50 minutes	Work individual and/ in groups	

Week	Indicator of Learning Achievements of Subjects. Student are able to:	Topics	Method of Learning	Course Time	Assignment and Evaluation	Ref.
	reconsideration of TOC components) Distinguish monitoring at different project management levels (results vs implementation)					
15	<ul style="list-style-type: none"> <li>• Explain the MS Project software.</li> <li>• Use the tool to develop a project plan.</li> <li>• Apply the tool to develop a project plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Activating lecture - Provide an overview of MS project and various toolbar/tabs/commands of MS Project.</li> <li>• Exercise - Demonstrate and work with project tasks and linking tasks.</li> <li>• Exercise - Demonstrate and work with assigning resources and costs for a project.</li> <li>• Exercise - Demonstrate and work with creating project timeline, milestones, summary task and sub task.</li> <li>• Assignment - Introduce a case (previously worked out) to develop a sanitation project plan and giving instructions to carry out the exercise</li> </ul>	<ul style="list-style-type: none"> <li>• Attentively listen to the lecture and engage with questions.</li> <li>• Watch the video, read the Tutorial and practice with the Software.</li> <li>• Attentively listen, read the case and ask questions for clarification.</li> <li>• Carry out the exercise - Working with MS Project to develop the project plan and submit it.</li> </ul>	3x50 minutes	Work individual and/ in groups	
16	<ul style="list-style-type: none"> <li>• Understand the purpose, structure and content of the case study and assignment</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment - Give instructions about the method and handout, ensure students form working groups, give feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Read instructions and case study materials, form working groups, distribute</li> </ul>	1x24 hours	Work individual and/ in groups	

<b>Week</b>	<b>Indicator of Learning Achievements of Subjects. Student are able to:</b>	<b>Topics</b>	<b>Method of Learning</b>	<b>Course Time</b>	<b>Assignment and Evaluation</b>	<b>Ref.</b>
			assignment sections in the group			

## **6. References**

1. Benator, Barry and Thumann, Albert. Project Management & Leadership for Engineering & Construction Projects, The Fairmont Press, Inc, 2003.
2. McBride, Melanie. Project Management Basics- How to Manage Your Project with Checklists, A Press, 2016.
3. Martinelli, Russ J. & Milosevic, Dragan Z. Project Management ToolBox- Tools and Techniques for the Practicing Project Manager, 2nd edition, Wiley, 2016.

## **7. Annex**

Scoring Instrument: Assignment: 100%