	Universitas Negeri Surabaya Faculty of Engineering Civil Engineering Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Hydraulic Modeling and Practical	2220103074		T=3	P=0	ECTS=4.77	3	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Yogie Risdianto, S.T., M.T.

Learning model	**Case Studies**
Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**
	Program Objectives (PO)
	PLO-PO Matrix

	P.O

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Short Course Description	Introduction to the basic concepts of closed channel hydraulics, the emergence of uniform speed-fluid motion, fluid in channels, imperfect-perfect ventury flumes, positive-negative dammed water surface curves, Breese-Ruhlmann calculations, distance of dam influence, critical water height, water movement moving towards flow, dam modeling, head loss in closed channels and hydraulic phenomena.
References	**Main :**

1. Djoni Irianto. 2001. Hidrolika 2 . Unesa Press.
2. Frank M. White. 1994. Fluide mechanic and hidraulic . Mc GrawHill.
3. Ronald V. Giles. 1990. Mekanika fluida dan Hidrolika. Jakarta: Erlangga.
4. Ven Te Chow. 1985. Hidrolika. Jakarta: Erlangga.
5. Soedradjat. 1983. Mekanika Fluida dan Hidrolika . Bandung: Nova.
6. Subramanya. 1995. Hidrolika. Jakarta: Erlangga.
7. ASCE. 2015. Jurnal of Hydraulic Engineering.
8. ISH. 2015. Jurnal of Hydraulic Engineering.

Supporters:	
Supporting lecturer	Drs. Djoni Irianto, M.T. Danayanti Azmi Dewi Nusantara, S.T., M.T.

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	Get to know the characteristics of flow patterns in closed channels	Explain the characteristics of flow patterns	**Criteria:** Perfect score if answered correctly	Discussion lectures and questions and answers 3 X 50			0%
2	Able to uphold the basic concept of closed channel hydraulics and channel modeling.	Upholding the basic concept of the uniform movement of flowing water due to damming	**Criteria:** Perfect score if answered correctly	Discussion lectures and questions and answers. Exercise 9 X 50			0%
3							0%
4							0%
5	Able to calculate and operate flow in imperfect and perfect flumes	Operating the difference between flow in a straight channel and flow in a ventury flume tool is not perfect or perfect	**Criteria:** Perfect score if answered correctly	Discussion lectures and questions and answers. Exercise 9 X 50			0%
6							0%
7							0%
8	UTS	-	**Criteria:** -	- 3 X 50			0%
9	Able to analyze positive and negative dammed water curve counters	Analyze the differences in positive and negative blockage calculation formulas	**Criteria:** Perfect score if answered correctly	Discussion lectures and questions and answers. Exercise 6 X 50			0%
10							0%
11	Able to calculate the impact of damming upstream using the Breese and Ruhlmann model	Explains Breese and Ruhlmann's counting model	**Criteria:** Perfect score if answered correctly	Discussion lectures and questions and answers. Exercise 6 X 50			0%
12							0%
13	Able to calculate constant water height (hm) and critical water height (hc)	Explain the difference between constant water height (hm) and critical water height (hc)	**Criteria:** Perfect score if answered correctly	Discussion lectures and questions and answers. Exercise 6 X 50			0%
14							0%
15	Able to prepare written reports calculating the movement of moving water to flow, calculating head loss in closed channels.	Prepare a complete written report on the calculation model for the movement of flowing water and the head loss that occurs at the channel cover	**Criteria:** Perfect score if answered correctly	Discussion lectures and questions and answers. Exercise 6 X 50			0%
16							0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.