

Teknik Irigasi dan Drainase

Course Brief Description:	The student will be able to demonstrate the understanding of processes and phenomena in hydrological cycles, and also have capability to analyze data in all component hydrology. This course covers: (1) concept of Hydrological Cycle, (2) Data Processing of precipitation, interception, evaporation, surface and subsurface flow, infiltration and percolation, and groundwater, (3) Statistical hydrology and (4) Rainfall-runoff Modeling.
Course Learning Objectives:	<p>[1] Student will be able to demonstrate understanding of processes and phenomena in hydrologic cycle.</p> <p>[2] Students will be able to analyze hydrologic data</p> <p>[3] Students will be able to calculate flow routing using hydrograph and modeling rainfall-runoff.</p>
Related Expected Learning Outcomes (ELOs):	<ul style="list-style-type: none"> • ELO-3: Apply knowledge of mathematics, sciences, and engineering principles in agricultural fields. • ELO-4: Use quantitative analysis, information technology and critical thinking in agricultural engineering profession. • ELO-6: Manage and utilize agricultural resources effectively, efficiently, and sustainably
Teaching Method	<ul style="list-style-type: none"> • Lecture and in-depth discussion • Independent assignment • Practices in Laboratory
Grading Policy	<ul style="list-style-type: none"> • Quiz and Assignment : 20% • Exam : 50% • Practice in Laboratory : 30%
Reference	<ul style="list-style-type: none"> • Linsley Jr., RK., MA Kohler, JLH. Paulhus, 1982. Hydrology for Engineers. Third Edition. McGraw-Hill Inc., New York. • Asdak, C., 2004. Hydrologi dan Pengelolaan Daerah Aliran Sungai. Gadjah Mada University Press, Yogyakarta.
Lecturer Name	<ul style="list-style-type: none"> • Prof. Dr. Ir. Ahmad Munir, M.Eng • Dr. Ir. Mahmud Achmad, MP • Dr. Ir. Daniel Useng, M.Eng.Sc • Dr. Suhardi, STP., MP

Course Outline

Lecture:	Topic:	
1	Introduction: Concept of Hydrology	
2	Cycle of Hydrology	Assignment 1
3	Watershed and Agriculture (Lab. Practices)	
4	Precipitation and Evaporation	Quiz 1

Lecture:	Topic:	
5	Infiltration and Percolations (Lab. Practices)	
6	Surface and Sub-Surface Flow	
7	Measurement of Surface Flow (Practices in Field)	Quiz 2
8	Mid Test	
9	Ground-water Flow	Assignment 2
10	Measurement of Groundwater (Practices in Field)	Quiz 3
11	Hydrograph	
12	Hydrologic Routing	
13	Hydraulic Routing	Assignment 3
14	Statistical Hydrology	Quiz 4
15	Rainfall-Runoff Model	
16	Final Exam	