

## Hidrologi Teknik

<b>Course Brief Description:</b>	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.
<b>Course Learning Objectives:</b>	<ol style="list-style-type: none"> <li>[1] Student will be able to demonstrate understanding of processes and phenomena in hydrologic cycle.</li> <li>[2] Students will be able to analyze hydrologic data</li> <li>[3] Students will be able to calculate flow routing using hydrograph and modeling rainfall-runoff.</li> </ol>
<b>Related Expected Learning Outcomes (ELOs):</b>	<ul style="list-style-type: none"> <li>• ELO-3: Apply knowledge of mathematics, sciences, and engineering principles in agricultural fields.</li> <li>• ELO-4: Use quantitative analysis, information technology and critical thinking in agricultural engineering profession.</li> <li>• ELO-6: Mengelola dan memanfaatkan sumber daya pertanian secara efektif, efisien, dan berkelanjutan.</li> <li>• ELO-9: Analyze the impact of engineering solutions to environment and society using multidisciplinary approach</li> </ul>
<b>Teaching Method</b>	<ul style="list-style-type: none"> <li>• Lecture and in-depth discussion</li> <li>• Independent assignment</li> <li>• Practices in Laboratory</li> </ul>
<b>Grading Policy</b>	<ul style="list-style-type: none"> <li>• Quiz and Assignment : 20%</li> <li>• Exam : 50%</li> <li>• Practice in Laboratory : 30%</li> </ul>
<b>Reference</b>	<ul style="list-style-type: none"> <li>• Linsley Jr., RK., MA Kohler, JLH. Paulhus, 1982. Hydrology for Engineers. Third Edition. McGraw-Hill Inc., New York.</li> <li>• Asdak, C., 2004. Hidrologi dan Pengelolaan Daerah Aliran Sungai. Gadjah Mada University Press, Yogyakarta.</li> </ul>
<b>Lecturer Name</b>	<ul style="list-style-type: none"> <li>• Prof. Dr. Ir. Ahmad Munir, M.Eng</li> <li>• Dr. Ir. Mahmud Achmad, MP</li> <li>• Dr. Ir. Daniel Useng, M.Eng.Sc</li> <li>• Dr. Suhardi, STP., MP</li> <li>• Samsuar, STP., M.Si</li> </ul>

### Course Outline

Lecture:	Topic:
1	Introduction: Concept of Hydrology

<b>Lecture:</b>	<b>Topic:</b>	
<b>2</b>	Cycle of Hydrology	Assignment 1
<b>3</b>	Watershed and Agriculture (Lab. Practices)	
<b>4</b>	Precipitation and Evaporation	Quiz 1
<b>5</b>	Infiltration and Percolations (Lab. Practices)	
<b>6</b>	Surface and Sub-Surface Flow	
<b>7</b>	Measurement of Surface Flow (Practices in Field)	Quiz 2
<b>8</b>	<b>Mid Test</b>	
<b>9</b>	Ground-water Flow	Assignment 2
<b>10</b>	Measurement of Groundwater (Practices in Field)	Quiz 3
<b>11</b>	Hydrograph	
<b>12</b>	Hydrologic Routing	
<b>13</b>	Hydraulic Routing	Assignment 3
<b>14</b>	Statistical Hydrology	Quiz 4
<b>15</b>	Rainfall-Runoff Model	
<b>16</b>	<b>Final Exam</b>	