



2023

MODULE DESCRIPTION

BACHELOR PROGRAM
AGRICULTURAL ENGINEERING
FACULTY OF AGRICULTURE
HASANUDDIN UNIVERSITY
2023



Irrigation and Drainage Engineering

Semester 5

Module designation	<i>Irrigation and Drainage Engineering</i>
Semester(s) in which the module is taught	V
Person responsible for the module	<ul style="list-style-type: none"> • <i>Prof. Dr. Ir. Ahmad Munir, M.Eng</i> • <i>Dr. Ir. Mahmud Achmad, MP</i> • <i>Dr. Ir. Daniel Useng, M.Eng.Sc</i> • <i>Dr. Suhardi, STP., MP</i>
Language	<i>Indonesia</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>lecture</i>
Workload (incl. contact hours, self-study hours)	<p><i>(Estimated) Total workload:</i> $2 \text{ SKS} \times 1.7 = 3.4 \text{ ECTS} = 91.8 \text{ hours}$</p> <ul style="list-style-type: none"> • <i>Lecture = 23.3 hours</i> • <i>Excercise = 28 hours</i> • <i>Sel study = 28 hours</i> • <i>Exam = 4 hours (MID term and final)</i> • <i>Exam preparation = 8.5 hours</i>
Credit points	<i>2 SKS = 3.4 ECTS</i>
Required and recommended prerequisites for joining the module	<i>Hydrology Engineering</i> <i>Fundamentals of Climatology</i> <i>Land Surveying</i> <i>Fluid Mechanics</i>
Module objectives/intended learning outcomes	<p><i>ILO 3: Apply knowledge of mathematics, sciences, and engineering principles in agricultural fields; (Knowledge 1)</i></p> <p><i>ILO 4: Use quantitative analysis, information technology and critical thinking in agricultural engineering profession; (Knowledge 2)</i></p> <p><i>ILO 6: Design simple equipment, components, or processes needed in agricultural engineering operations; (Skill 2)</i></p>
Content	<p><i>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) Rainfallrunoff Modeling.</i></p>
Examination forms	<i>Writing</i>
Study and examination requirements	<i>Attendance above 80%</i>
Reading list	<ul style="list-style-type: none"> • <i>Linsley Jr., RK., MA Kohler, JLH. Paulhus, 1982. Hydrology for Engineers. Third Edition. McGraw-Hill Inc., New York.</i> • <i>Asdak, C., 2004. Hydrologi dan Pengelolaan Daerah Aliran Sungai. Gadjah Mada University Press, Yogyakarta.</i>