



2023 MODULE DESCRIPTION

BACHELOR PROGRAM
AGRICULTURAL ENGINEERING
FACULTY OF AGRICULTURE
HASANUDDIN UNIVERSITY
2023



Renewable Energy Practicum

Semester 5

Module designation	<i>Renewable Energy Practicum</i>
Semester(s) in which the module is taught	V
Person responsible for the module	<i>Dr. Ir. Supratomo, DEA Dr. Ir. Abdul Waris, MT Diyah Yumeina RD, STP., M.Agr., Ph.D</i>
Language	<i>Indonesia</i>
Relation to curriculum	<i>Compulsory</i>
Teaching methods	<i>Lab works</i>
Workload (incl. contact hours, self-study hours)	<i>(Estimated) Total workload: 1 SKS = 1.7 ECTS = 45.9 hours (1 ECTS around 27 hours) > Laboratory session = 12 hours > Lab report = 30 hours > Virtual experiment = 1 hours > Final examination = 2.5 hours</i>
Credit points	<i>1 SKS = 1.7 ECTS</i>
Required and recommended prerequisites for joining the module	<i>Fluid Mechanics Introduction to Climatology Engineering Mechanics</i>
Module objectives/intended learning outcomes	<i>ILO3: apply knowledge of mathematics, sciences, and engineering principles in agricultural fields; (Knowledge 1) ILO4: use quantitative analysis, information technology and critical thinking in agricultural engineering profession; (Knowledge 1) ILO7: design simple equipment, components, or processes needed in agricultural engineering operations; (Competence 1)</i>
Content	<i>This course studies the concepts of energy, conversion of energy, and renewable energy in agriculture. The topics include the concept of energy and law of the conservation of energy (the 2nd law of thermodynamics), harvesting of biomass energy (combustion, pyrolysis, gasification and biogas), solar energy, and hydro energy.</i>
Examination forms	<i>Writing and oral exam</i>
Study and examination requirements	<i>Completion of all laboratory reports</i>
Reading list	<ul style="list-style-type: none"> • <i>Karogirou, Solteris. 2009. Solar Energy Engineering: Processes and System. Academic Press. San Diego</i> • <i>Sørensen, Bent. 2007. Renewable Energy Conversion, Transmission and Storage. Academic Press. San Diego.</i> • <i>Sukandarrumidi, Herry Zadrak Kotta dan Djoko Wintolo. 2014. Energi Terbarukan : Konsep Dasar Menuju Kemandirian Energi. Gadjah Mada University Press, Yogyakarta.</i> • <i>Teodorita Al Seadi, Dominik Rutz, Heinz Prassl, Michael Köttner, Tobias Finsterwalder, Silke Volk, and Rainer Janssen. 2008. Biogas – Handbook. University of Southern Denmark, Esbjerg.</i>