



**HASANUDDIN
UNIVERSITY**

2023

MODULE DESCRIPTION

BACHELOR PROGRAM
AGRICULTURAL ENGINEERING
FACULTY OF AGRICULTURE
HASANUDDIN UNIVERSITY
2023



Heat Transfer & Thermodynamics Practicum

Semester 4

Module designation	<i>Heat Transfer and Thermodynamics Practicum</i>
Semester(s) in which the module is taught	<i>IV</i>
Person responsible for the module	<i>Dr. Gemala Hardinasinta, S.TP</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>Engineering Mathematics I Engineering Properties of Materials</i>
Module objectives/intended learning outcomes	<i>ILO 3: Apply knowledge of mathematics, sciences, and engineering principles in agricultural fields; (Knowledge 1) ILO 4: Use quantitative analysis, information technology and critical thinking in agricultural engineering profession; (Knowledge 2) ILO 5: Use techniques, skills, and modern tools necessary for agricultural engineering practices; (Skill 1) ILO 7: Manage and utilise agricultural resources effectively, efficiently, and sustainably; (Competence 1)</i>
Content	<i>This course provides an understanding of heat transfer models, namely conduction, convection, and radiation, as well as the mechanisms of heat transfer processes from these three models. The topics covered in this practicum include the evaluation of factors influencing the heat transfer process, temperature distribution within materials for each heat transfer model</i>
Examination forms	<i>Writing and oral exam</i>
Study and examination requirements	<i>Completion of all laboratory reports</i>
Reading list	<i>1. Çengel, Y. A. 1998. Heat Transfer: A Practical Approach. McGraw Hill, Inc. Hightstown, N.J. 2. Holman, J. P. 2010. Heat Transfer 10th ed. McGraw-Hill. New York 3. Singh, R. Paul. 2013. Virtual Experiments in Food Processing 2nd Edition. RAR Press. Davis, CA.</i>