

MODULE HANDBOOK

Module Name	: Fluid Mechanics
Module Level	: Intermediate
Abbreviation, if applicable	: FI3202
Sub-heading, if applicable	:
Semester/ term	: 6
Module Coordinator(s)	:
Lecturer(s)	:
Language	: Indonesian
Classification within the curriculum	: Mandatory course
Teaching format/ class hours per week during the semester	: Lecture + student-centered learning/ 3 x 50 minutes per week
Workload	:
Credits Points	: 3 credits
Requirements	: Mathematical Physics (2101), Mechanics (2102)
Leraning goals	: Knowledge: (1) Principles of fluid mechanics (2) How to model Skill: (1) Solving problems related to fluids (2) Modeling Competencies: (1) Designing method for problem solving
Content	: The material covered in this course includes transport phenomena, stationary fluids, Lagrangian and Eulerian frame, stream- and streak-line, mass conservation, momentum and energy conservation, Bernoulli equation, potential flow, viscosity (Newtonian and non-Newtonian fluids), viscous flow, stress and strain tensor, Navier-Stokes equation, non-dimensional analysis (similarity and Reynolds number), force equilibrium, rotational flow, vorticity, laminar boundary layer, drag on plate, turbulence, and introduction to computational fluid dynamics. The course is delivered via lectures, discussions, video, and demonstration by simple experiments. The final note is determined by take-home tests, presentation of scientific articles, and two examinations.