



UNIVERSITAS NEGERI YOGYAKARTA  
FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
DEPARTMENT OF PHYSICS EDUCATION  
**PHYSICS STUDY PROGRAM**

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**Bachelor of Physics**

**MODULE HANDBOOK**

Module name:	Fluid Mechanics
Module level, if applicable:	Bachelor Program
Code:	FSK6229
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	4
Module coordinator:	Denny Darmawan, M.Sc.
Lecturer(s):	Denny Darmawan, M.Sc., Dr. Sukardiyono
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	Lecture (100 minutes lectures and 120 minutes structured activities).
Workload:	Total workload is around 91 hours in one semester which consists of 100 minutes of lectures, 120 minutes of structured activities, and 120 minutes of individual study per week for 16 weeks.
Credit points:	2 SKS (3.25 ECTS)
Prerequisites course(s):	-
Course Outcomes	Students graduating from this course will be able to:

	<p>CO1. Explain the basic concepts of static fluid and flowing fluid</p> <p>CO2. Analyze the flow of ideal fluid using Bernoulli's equation</p> <p>CO3. Analyze the flow of fluid using control volume approach</p> <p>CO4. Analyze the model of fluid flow using dimensional analysis and similitude</p> <p>CO5. Explain the basic concepts of open flow and flow in conduits</p>
Content:	This course discusses the basic concepts of fluid flow. The students will learn the analysis of fluid flow using Bernoulli's equation and control volume approach, and also the fluid flow modelling using dimensional analysis and similitude
Study / exam achievements:	<p>The final grade will be weighted as follow:</p> <p>a. Case study : 20%</p> <p>b. Group project : 30%</p> <p>c. Midterm exam: 20%</p> <p>d. Final exam : 30%</p>
Forms of media:	Board, LCD Projector, Laptop/Computer
Reference:	<ol style="list-style-type: none"> <li>1. Elger D.F., LeBret B.A., and Crowe, C.T., 2015, Engineering Fluid Mechanics 11<sup>th</sup> edition, Wiley</li> <li>2. White, F.M., 2020, Fluid Mechanics, McGraw-Hill</li> <li>3. Gerhart, P.M. &amp; Gerhart, T.S., 2021, Munson, Young and Okiishi's Fundamental of Fluid Mechanics, McGraw-Hill</li> </ol>

### PLO and CO mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
CO1		✓			✓			
CO2		✓			✓			
CO3		✓			✓			
CO4		✓			✓			
CO5		✓			✓			