MINISTRY OF EDUCATION AND CULTURE
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF NATURAL SCIENCES
Ketintang Campus, Jl. Ketintang C12 Building, Surabaya 60231
Phone (031)18296427
Website http://sains.fmipa.unesa.ac.id

Module Name:	*Fluida* (Fluid)
Module Level:	Bachelor Degree/Undergraduate Program
Course Code:	8420103048
Abbreviation, if applicable:	Fluid
Sub-heading, if applicable:	
Courses included in the module, if applicable:	Not applicable
Semester/term	IV/second year (sophomore)
Module coordinator(s):	Tutut Nurita, S.Pd., M.Pd.
Lecturer(s):	Tutut Nurita S.Pd., M.Pd. Muhamad Arif Mahdiannur, S.Pd., M.Pd. Enny Susiyawati, Ph.D
Language:	*Bahasa Indonesia* (Indonesian Language)
Classification within the curriculum:	Compulsory Course / ~~Elective Studies~~
Teaching format/class hours per week during the semester:	3 contact hours of lectures (Indonesia credit semester or *sks**)
Workload:	3 x 50 minutes lectures, 3 x 60 minutes structured activity, 3 x 60 minutes individual activity, 14 weeks per semester, 119 total hours per semester ~ 3.97 ECTS**
Credit point:	3 *sks* (3.97 ECTS)
Requirements:	– General Physics (8420103045) – General Chemistry (8420103074) – General Biology (8420103023)
Learning goals/competencies:	**Course Learning Outcomes (CLO):** After taking this course, university students have ability to; 1. Describes the concepts and principles / laws of fluids (static, dynamic, and ideal gases); 2. Formalize procedural problem solving in fluid 3. Solve problems related to fluids and their applications in everyday life **Sub-CLOs:** 1. Explain the concepts of static fluids, dynamic fluids and ideal gases and their application in everyday life as part of the development of science and technology with the assignment to solve problems in the field of science; 2. Analyzing by solving problems procedurally the principles / laws of fluids (static, dynamic, and ideal gases) include: write down the objectives of the experiment, write down the background, formulate problems, determine hypotheses, write down experimental data, analyze experimental data by

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<tr><td></td><td>connecting with the concept of fluid, conclude the results of the experiment;
3. Analyze information, data in fluid practicum and can make reports correctly</td></tr>
<tr><td>Content:</td><td>Definition of fluids, properties of fluids, pressure on solid and fluid objects, principles / laws of static fluids, specific properties of liquids, principles / laws of dynamic fluids, typical properties of gaseous fluids, and solving problems applications in the field of science such as blood pressure, diffusion in the event of respiration, osmotic pressure.</td></tr>
<tr><td>Attribute Soft skill:</td><td>Discipline, collaboration, responsibility, and argumentation in the natural classroom setting</td></tr>
<tr><td>Study/exam achievements:</td><td>Students are considered to be competent and pass if at least get 40% of the maximum final grade. The final grade (NA) is calculated based on the following weight:

<table><tr><th>Assessment Components</th><th>Percentage Contribution</th></tr><tr><td>Participation</td><td>20%</td></tr><tr><td>Assignment</td><td>30%</td></tr><tr><td>Mid-semester test</td><td>20%</td></tr><tr><td>Final semester test</td><td>30%</td></tr><tr><td>Total</td><td>100%</td></tr></table></td></tr>
<tr><td>Learning Methods</td><td>Constructivism, student-centered approach, project-based learning, lecturing, discussion, and presentation (structured activities), and flip learning</td></tr>
<tr><td>Form of Media:</td><td>LCD, PowerPoint slides, worksheets, and e-learning Vinesa</td></tr>
<tr><td>Literature (main references):</td><td>1. Bansal, R.K.2008.A Textbook of Fluid Mechanics.Delhi : Ajit Printers, Old Maujpur.
2. Bruce, dkk. 2003. Mekanika Fluida Jilid 1 Edisi Keempat. Jakarta: Erlangga.
3. Currie, I.G. 2012.Fundamental Mechanics of Fluids, Fourth Edition. USA: CRC Press
4. Giancoli, Douglas. 2010. Fisika I. Jakarta: Erlangga.
5. Giordano, Nicholas J. 2010. College Physics: Reasoning and Relationships, First Edition. Canada: Nelson Education, Ltd..</td></tr>
<tr><td rowspan="2">Notes:</td><td>*1 sks in learning process = three contact hours that consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes) according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.</td></tr>
<tr><td>**1 sks = 1,59 ECTS</td></tr>
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