UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF PHYSICS EDUCATION
PHYSICS STUDY PROGRAM
Colombo St. Number 1 Yogyakarta 55281
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Module name:	Special Relativity
Module level, if applicable:	Undegraduate
Code:	FSK6222
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	3rd
Module coordinator:	Dr. Supardi, S.Si., M.Si.
Lecturer(s):	Dr. Supardi, S.Si., M.Si.
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory Course
Teaching format / class hours per week during the semester:	100 minutes lectures and 120 minutes structured activities per week.
Workload:	Total workload is 90 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (3.25 ECTS)
Prerequisites course(s):	-
Course Outcomes	After taking this course the students have ability to:

<table>
<tr><td></td><td>CO1. Students are able to explain Newtonian relativity and the invariance of mechanics laws under the Galileo transformation
CO2. Students are able to explain the Lorentz transformation and the resulting aspects
CO3. Students are able to explain the invariance of the mechanics and electrodynamics laws to the Lorentz transformation
CO4. Solve problems related to the subject.</td></tr>
<tr><td>Content:</td><td>This course contains important materials as part of Modern Physics, including: background on the emergence of Special Theory of Relativity, Relativistic Kinematics, relativistic dynamics, and relativity and electromagnetism</td></tr>
<tr><td>Study / exam achievements:</td><td>Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.

The final mark will be weight as follow:

<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO2, CO3 and CO4</td><td>a. Individual Assignment
b. Group Assignment
c. Mid
d. Final Exam</td><td>Presentation / written test</td><td>15%
15%
20%
25%
25%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table>
</td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer, online</td></tr>
<tr><td>Literature:</td><td>
1. Resnick, R., 1968, Introduction to Special Relativity, New York: John Wiley & Sons.
2. Nolting, W., 2017Theoretical Physics 4. Special Theory of Relativity, Springer Nature.
3. MANSOURI, R and SEXL, R.U, 1976, A Test Theory of Special Relativity:II. First Order Tests, General Relativity and Gravitation, Vol. 8, No. 7 (1977), pp. 515-524
4. Jia-An Lu, 2016, Energy, momentum and angular momentum conservations in de Sitter special relativity Gen Relativ Gravit (2016) 48:6
</td></tr>
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PLO and CO mapping

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