

FI362 Space Physics

Module name:	Space Physics	
Module level, if applicable:	Undergraduate	
Code:	FI362	
Sub-heading, if applicable:	-	
Classes, if applicable:	-	
Semester:	5 th	
Module coordinator:	Judhistira Aria Utama	
Lecturer(s):	Judhistira Aria Utama	
Language:	Bahasa Indonesia	
Classification within the curriculum:	Elective course	
Type of Teaching	Contact hours per week during the semester	Class Size
<ol style="list-style-type: none"> 1. Lecture (conceptual, contextual and problem-solving approaches through expository, discussions and presentation) 2. Structured activities (assignments based on conceptual, contextual and problem-solving approaches, Presentation) 3. Self-study (Mini research project) 	2 hours 30 minutes	20
Workload:	Total workload is 136 hours 4.8 ECTS (8.160 minutes) per semester which consists of 2100 minutes (1.22 ECTS) lectures, 2520 minutes (1.58 ECTS) structured activities, 2520 minutes (1.58 ECTS) self-study per week for 14 weeks, 400 minutes (0.2 ECTS) for each exam, and 480 (0.22 ECTS) minutes for each exam preparation.	
Credit points:	4.8 ECTS	
Pre-requisites course(s):	FI121 Basic Physics I, FI340 Mechanics	
Course Learning Outcomes (CLO):	<p>After taking this course the students have ability to:</p> <p>CLO1. Describe the physical processes that take place in the Solar System from the formation to the birth of the Solar System</p> <p>CLO2. Describe the concept of emission law and its application in reducing the temperature formulation of dark objects in the Solar System</p> <p>CLO3. Describe the structure of the Sun</p> <p>CLO4. Describe the concepts of tidal forces and Roche limits, a</p>	

	<p>configuration of Solar System objects, and eclipse phenomena, including the discussion of the Saros series as an eclipse predictor</p> <p>CLO5. Describe the formation of the phases of the Moon and the function model of the visibility of near-Sun celestial objects</p> <p>CLO6. Describe the origin of small Solar System objects (asteroids and comets) and their groupings as well as procedural knowledge of the use of asteroid light curves for determining the rotation period</p> <p>CLO7. Identify the asteroid objects, angular velocity, and their equatorial coordinates from observed portrait plates</p> <p>CLO8. Describe the types of double stars and procedural knowledge in determining the physical size of stars from double star observations</p> <p>CLO9. Describe the types of variable stars</p> <p>CLO10. Describe the types of star clusters and procedural knowledge of the use of the Hertzsprung-Russel diagram as a tracker of the evolution of star clusters</p> <p>CLO11. Describe the light pollution and its multidimensional impact</p> <p>CLO12. Measure the light intensity (illuminance & luminance) using photometer instruments (eg Sky Quality Meter) and processing measurement data</p> <p>CLO13. Disseminate the results of research/scientific study results in the form of reports according to standard scientific rules and present them in lectures</p> <p>CLO14. Process of data acquisition and ethics in the use of public data</p>																									
Content:	The solar system, the Emission law, the structure of the Sun, the tidal forces and Roche limits, the phases of the Moon, the small Solar System objects (asteroids and comets), the types of double stars, variable stars, the star clusters, the light pollution, the light intensity (illuminance & luminance)																									
Study/exam achievements:	<p>The final mark will be weight as follow:</p> <table border="1" data-bbox="655 1312 1414 1805"> <thead> <tr> <th>No</th> <th>CLO</th> <th>Assessment Object</th> <th>Assessment Techniques</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1 - 8</td> <td>Subject specific competence: a. Individual assignments b. Mid Exam</td> <td>Written Written test</td> <td>15% 25%</td> </tr> <tr> <td>2</td> <td>9 – 12</td> <td>c. Individual assignments d. Final Exam</td> <td>Written Written test</td> <td>15% 25%</td> </tr> <tr> <td>3</td> <td>13-14</td> <td>e. Project Presentation</td> <td>Performance</td> <td>20%</td> </tr> <tr> <td colspan="4">Total</td> <td>100%</td> </tr> </tbody> </table>	No	CLO	Assessment Object	Assessment Techniques	Weight	1	1 - 8	Subject specific competence: a. Individual assignments b. Mid Exam	Written Written test	15% 25%	2	9 – 12	c. Individual assignments d. Final Exam	Written Written test	15% 25%	3	13-14	e. Project Presentation	Performance	20%	Total				100%
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Forms of media:	Board, LCD Projector, Laptop/Computer, LMS																									

