

	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Physics Education Undergraduate Study Program					Document Code													
	SEMESTER LEARNING PLAN																		
Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date												
Physics Olympiad	8420302263	Physics Education Philosophy and Curriculum	T=2	P=0	ECTS=3.18	4	July 17, 2024												
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator													
	Utama Alan Deta, S.Pd., M.Pd., M.Si.		Prof. Nadi Suprpto, Ph.D.			Mita Anggaryani, M.Pd., Ph.D.													
Learning model	Project Based Learning																		
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																		
	Program Objectives (PO)																		
	PO - 1	Students are able to demonstrate an understanding of Olympic Philosophy																	
	PO - 2	Students understand the management and stages of Physics Olympiads at middle and high school levels																	
	PO - 3	Students are able to solve physics Olympiad questions																	
	PO - 4	Students study the forms of physics Olympiad questions																	
	PO - 5	Students are able to design physics questions in the form of theory and experiments for competition activities																	
	PLO-PO Matrix																		
		P.O																	
		PO-1																	
		PO-2																	
		PO-3																	
		PO-4																	
		PO-5																	
	PO Matrix at the end of each learning stage (Sub-PO)																		
		P.O	Week																
		PO-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
		PO-2																	
		PO-3																	
		PO-4																	
		PO-5																	
Short Course Description	This course studies the philosophy of the Physics Olympiad and hones problem solving skills in Physics Olympiad questions. This course also provides skills in reviewing existing Physics Olympiad questions (OSN Kemendikbud and KSM Kemenag) and provides experience in designing Physics questions in theoretical form and designing Physics questions in experimental form. Lectures are carried out using repository discussion methods, skills sharpening, classroom discussions, workshops and presentations.																		
References	Main :																		
	<ol style="list-style-type: none"> Buku Pedoman KSN SMP terbaru Buku Pedoman KSN SMA terbaru Buku Pedoman KSM MTs terbaru Buku Pedoman KSM MA terbaru APhO Syllabus terbaru IPhO Book terbaru Serway, RA dan Jewett , JW. 2013. Physics for Scientists and Engineers 9th Edition. Cengage Learning U.A. Deta, S Admiko, dan R. Rahmanisa. 2023. Olimpiade Fisika: Filsafat, Sejarah, Pelaksanaan, dan Bank Soal Kompetisi Fisika tingkat Nasional dan Internasional. Sidoarjo: PT Mitra Edukasi dan Publikasi 																		
	Supporters:																		
	1. Soal-Soal Olimpiade/Kompetisi Fisika, buku, artikel ilmiah, dan sumber lain yang relevan																		
Supporting lecturer	Dr. Dwikoranto, M.Pd. Setyo Admoko, S.Pd., M.Pd. Abu Zainuddin, S.Pd., M.Pd. Prof. Nadi Suprpto, S.Pd., M.Pd., Ph.D. Mukhayyarotini Niswati Rodliyatul Jauhariyah, S.Pd., M.Pd. Utama Alan Deta, S.Pd., M.Pd., M.Si.																		

Week	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (offline)	Online (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to demonstrate an understanding of Olympic/Competition Philosophy	Able to demonstrate an understanding of Olympic/Competition Philosophy	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Olympic Philosophy Readers: <i>UA Deta, S Admiko, and R. Rahmanisa. 2023. Physics Olympiad: Philosophy, History, Implementation and Question Bank for National and International Physics Competitions. Sidoarjo: PT Mitra Education and Publication</i>	5%
2	Students understand the management and stages of Physics Olympiads/Competitions at middle school & high school levels	Understand the management and stages of Physics Olympiads/Competitions at middle school & high school levels	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Overview of OSN & KSN for junior high school & senior high school equivalent Ministry of Education and Culture & Ministry of Religion Library: <i>Latest SMP KSN Handbook</i> Material: Overview of OSN & KSN for junior high school & high school equivalent Ministry of Education and Culture & Ministry of Religion Library: <i>Latest KSN High School Guidebook</i> Material: Overview of OSN & KSN for junior high school & high school equivalent Ministry of Education and Culture & Ministry of Religion Library: <i>Latest KSM MTs Handbook</i> Material: Overview of OSN & KSN for middle school & high school equivalent Ministry of Education and Culture & Ministry of Religion Library: <i>Latest KSM MA Handbook</i>	5%
3	Students study the forms of Physics Olympiad/Competition questions at middle school & high school level	Able to study the forms of Physics Olympiad/Competition questions at middle school & high school level	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Forms of OSN questions at middle school & high school level. Library: <i>Physics Olympiad/Competition questions, books, scientific articles and other relevant sources</i>	5%
4	Students study the forms of Physics Olympiad/Competition questions at middle school & high school level	Able to study the forms of Physics Olympiad/Competition questions at middle school & high school level	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Forms of KSM Questions at Middle & High School Levels Library: <i>Physics Olympiad/Competition Questions, books, scientific articles, and other relevant sources</i>	5%
5	Students are able to solve National Physics Olympiad/Competition questions	Able to solve National level Physics Olympiad/Competition Theory questions	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Study of Theory Questions at National Physics Olympiads/Competitions References: <i>Serway, RA and Jewett, JW. 2013. Physics for Scientists and Engineers 9th Edition. Cengage Learning</i> Material: Study of National Physics Olympiad/Competition Theory Questions Library: <i>Physics Olympiad/Competition Questions, books, scientific articles, and other relevant sources</i>	5%

6	Students are able to solve National Physics Olympiad/Competition questions	able to solve National level Physics Olympiad/Competition Theory questions	Criteria: Qualitative Form of Assessment : Participatory Activities	Students are able to solve National Physics Olympiad/Competition questions in 2 x 50 minutes	Students are able to solve National Physics Olympiad/Competition questions in 2 x 50 minutes	Material: Study of Theory Questions at National Physics Olympiads/Competitions References: Serway, RA and Jewett, JW. 2013. <i>Physics for Scientists and Engineers 9th Edition.</i> Cengage Learning Material: Study of National Physics Olympiad/Competition Theory Questions Library: Physics Olympiad/Competition Questions, books, scientific articles, and other relevant sources	5%
7	Students are able to solve National Physics Olympiad/Competition questions	able to solve National level Physics Olympiad/Competition Experiment questions	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Study of National Physics Olympiad/Competition Experimental Questions Library: Physics Olympiad/Competition Questions, books, scientific articles, and other relevant sources	5%
8	Midterm exam	1. Able to demonstrate an understanding of Olympic/Competition Philosophy 2. Understand the management and stages of Physics Olympiads/Competitions at middle school & high school levels 3. Able to study the forms of Physics Olympiad/Competition questions at middle school & high school level 4. Able to solve National level Physics Olympiad/Competition Theory questions 5. able to solve National level Physics Olympiad/Competition Experiment questions		Written Test 2 x 50 minutes	Written Test 2 x 50 minutes	Material: Mid-semester Evaluation References: Serway, RA and Jewett, JW. 2013. <i>Physics for Scientists and Engineers 9th Edition.</i> Cengage Learning	10%
9	Students are able to solve questions at the International Physics Olympiad/Competition	Able to solve Theory questions at International Physics Olympiads/Competitions	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Study of Theory Questions for International Physics Olympiads/Competitions Library: Latest APhO Syllabus Material: Study of Theory Questions at International Physics Olympiads/Competitions Library: Latest IPhO Book	5%
10	Students are able to solve questions at the International Physics Olympiad/Competition	Able to solve Theory questions at International Physics Olympiads/Competitions	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Study of Theory Questions for International Physics Olympiads/Competitions Library: Latest APhO Syllabus Material: Study of Theory Questions at International Physics Olympiads/Competitions Library: Latest IPhO Book	5%
11	Students are able to solve questions at the International Physics Olympiad/Competition	Able to solve International Physics Olympiad/Competition Experiment questions	Criteria: Qualitative Form of Assessment : Participatory Activities	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Study of Theory Questions for International Physics Olympiads/Competitions Library: Latest APhO Syllabus Material: Study of Theory Questions at International Physics Olympiads/Competitions Library: Latest IPhO Book	5%

12	Students are able to design physics questions in theoretical form for national level Olympic/Competition activities	Able to design Physics questions in theoretical form for National level Olympic/Competition activities	Form of Assessment : Project Results Assessment / Product Assessment	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Designing Theoretical Physics Questions for National Olympiads/Competitions References: Serway, RA and Jewett, JW. 2013. <i>Physics for Scientists and Engineers 9th Edition.</i> Cengage Learning	5%
13	Students are able to design physics questions in theoretical form for national level Olympic/Competition activities	Able to design Physics questions in theoretical form for National level Olympic/Competition activities	Criteria: Qualitative Form of Assessment : Project Results Assessment / Product Assessment	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Designing Theoretical Physics Questions for National Olympiads/Competitions Library: <i>Physics Olympiad/Competition Questions, books, scientific articles, and other relevant sources</i>	5%
14	Students are able to design Physics questions in theoretical form for National level Olympiads/Competitions	Able to design Physics questions in theoretical form for National level Olympic/Competition activities	Criteria: Qualitative Form of Assessment : Project Results Assessment / Product Assessment	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Designing Theoretical Physics Questions for National Olympiads/Competitions References: Serway, RA and Jewett, JW. 2013. <i>Physics for Scientists and Engineers 9th Edition.</i> Cengage Learning	5%
15	Students are able to design Physics questions in the form of experiments for National Olympic/Competition activities	Able to design Physics questions in the form of experiments for National Olympic/Competition activities	Criteria: Qualitative Form of Assessment : Project Results Assessment / Product Assessment	Small Group Discussion 2 x 50 minutes	Small Group Discussion 2 x 50 minutes	Material: Designing Experimental Physics Questions for National Olympiads/Competitions Library: <i>Physics Olympiad/Competition Questions, books, scientific articles, and other relevant sources</i>	5%
16	Final Semester Evaluation / Final Semester Examination	Able to design Physics questions for National level Olympic/Competition activities	Criteria: Qualitative	2 x 50 minute Project Assignments	2 x 50 minute Project Assignments	Material: End of Semester Evaluation References: Serway, RA and Jewett, JW. 2013. <i>Physics for Scientists and Engineers 9th Edition.</i> Cengage Learning	20%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	45%
2.	Project Results Assessment / Product Assessment	20%
		65%

Notes

- Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
- The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
- Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
- Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
- Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
- Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
- Forms of assessment:** test and non-test.
- Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
- Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.