

## Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Physics Education Undergraduate Study Program

Document Code

## SEMESTER LEARNING PLAN

Courses		000	E			I	Cours	oo <b>F</b> -	mile		0	li+ \A/-	iaht		CEN/	CTEP	0.0	mniles
Courses		COD	E				Cour	se Fa	mily			lit We	ignt		SEME	ESTER	Co Da	mpilat te
Physics Learn	ning Media	8420	302287				Comp Progr	oulsor <del>am S</del>	y Stu <del>ubjec</del>	dy ts	T=2	P=0	ECTS	=3.18		4	Jul	y 17, 2
AUTHORIZAT	ION	SP D	eveloper				· J				Clus	ter Co	oordina	tor	Study	/ Progr	am Co	oordin
		Abdı	ıl Kholiq, N	1.Pd					1	Drs. Im	am Si	ucahyo	o, M.Si		Mit	a Angg F	aryani 'h.D.	, M.Pd
Learning model	Project Based L	.earning																
Program	PLO study pro	gram that is	charged t	o the	cour	se												
Learning Outcomes	Program Object	ctives (PO)																
(PLO)	PO - 1	Examining va	rious medi	a and	teach	ning ai	ds in	learni	ng									
	PO - 2	Develop learr	ning props															
1	PO - 3	Develop learr	ning poster	s/banı	ners													
1	PO - 4	Developing p			ing m	edia												
1	PO - 5	Developing le	-															
1	PO - 6	Develop learr	-															
1	PO - 7	Developing a	nimated lea	arning	medi	a												
1	PLO-PO Matrix	(																
1																		
1		P.0																
1		PO-:																
1		PO-2																
1		PO-:	-															
1		PO-4																
1		PO-																
1		PO-0																
1		PO-	7															
1																		
1	PO Matrix at th	e end of eac	h learning	j stag	je (Si	ıb-PC	)											
1		P.0		-	1	1			1	<del>1 1</del>	Wee		1 1		[			1
1			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		PO-1																
l I		PO-2																
1		PO-3																
1		PO-4																
l I		PO-5																
1		PO-6																
1		PO-7																
			ning func	tion,	role a	nd ty	pes o	f lear	ning	media;	choo	se rel	evant le	earnin	g medi	a; as v	vell as	the b
Short Course Description	This course exa concept of media	mines the mea a development,	which star	ts fror	n plan	ining i	oy ana	aryzini	y nee	us, ue:	sign b	у так	ing prote	otypes	, and c	levelop	ment.	
Course	This course exa concept of media Main :	mines the mea a development,	which star	ts fror	n plan	ining i	oy ana	aiyzini		us, ues		у так	ing proto	otypes	s, and c	levelop	ment.	

		<ol> <li>Heinich,</li> <li>Reynolds</li> <li>Arsyad, A</li> <li>Munadi, Y</li> </ol>	P. 1997. Practical Guidelin R., Molenda. 1999. Instruct s, Karen E. 1996. Technolo Azhar, 2009. Media pembel Yudhi. 2008. Media pembe 2015. Media Pembelajara	tional Media and Tech gy for the teaching an lajaran . Jakarta: Raja lajaran: sebuah pende	nologies forLearı d learning scienc Grafindo Persad ekatan baru . Jak	ning . USA: Prentice Hall e . Boston: Allyn and Bac la arta: Gaung Persada, 200	on	ge Publisher
		Supporters:						
		<ol> <li>Surjono,</li> <li>Susanti, applicatic</li> <li>Wati, M., Physics:</li> <li>Wijaya, F and Stud Institute (</li> <li>Wahyuni Creative IOP Publ</li> </ol>		nbelajaran interaktif k (2020). Developmen dia in high schools. Jo Mahtari, S. (2018, Ma J7, No. 1, p. 012044). arto, H. (2021). Devela Physics Subjects: Sy s and Social Sciences 9, June). Physics Proj	onsep dan penge t of contextual ba ournal of Educatio arch). Developing IOP Publishing. opment of Mobile stematic Literatu s, 4(2), 3087-3099 ps Development	embangan. Yogyakarta: U ased electronic global wa anal Sciences, 4(3), 541. physics learning media e Learning in Learning Me re Review. Budapest Inte 3. based on Personal Desk	INY Press Irming modules to using 3D cartoor edia to Improve I rnational Resear Laboratory Syste	using flipbook n. In Journal of Digital Literacy rch and Critics em to Improve
Support lecturer	ing	Drs. Imam Sucah Abd. Kholiq, S.Pc Mita Anggaryani, Dr. Muhammad S Muhammad Habi Dr. Oka Saputra,	Í., M.T. M.Pd., Ph.D. satriawan, M.Pd. bbulloh, M.Pd.					
Week-	-	l abilities of h learning le	Evaluat	ion	Learr Studen	lp Learning, ning methods, t Assignments, timated time]	Learning materials [ References	Assessment Weight (%)
		p-PO)	Indicator	Criteria & Form	Offline( offline)	Online ( <i>online</i> )	1	
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	cor me me fun prii	scribe the basic neepts of learning dia including the aning, types, ctions and neiples of using rning media	<ol> <li>Explain the meaning of media</li> <li>Explain the types/classifications of Physics learning media</li> <li>Describe the relevance between media types and their functions.</li> <li>Identify the benefits of media from various examples of the Physics learning process</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Form of Assessment : Participatory Activities, Portfolio Assessment	Presentations, questions and answers, and discussions 2 X 50		Material: understanding of learning media, types, functions, characteristics and principles of learning media. <b>References:</b> Arsyad, Azhar, 2009. Learning media. Jakarta: Raja Grafindo Persada	5%
2		Understand the development principles and procedures for developing Physics learning media .Have a responsible attitude towards performance in Physics learning media lectures	<ol> <li>Explain the principles of learning media development</li> <li>Describe the procedures for developing learning media</li> <li>Comparing several learning media development procedures in learning research.</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Form of Assessment : Participatory Activities, Portfolio Assessment	Presentation, Discussion and questions and answers 2 X 50		Material: Principles of development and procedures for developing learning media. <b>Reference:</b> Surjono, HD 2019. Interactive learning multimedia concepts and development. Yogyakarta: UNY Press	0%

3	<ol> <li>Analyzing various hardware-based learning media including teaching aids and physics learning KITs</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Describe the types and functions of learning media in the form of KIT and teaching aids</li> <li>Evaluate the feasibility of learning media from the aspects of theoretical validity, practicality and security in learning.</li> <li>Planning the procurement of learning media as a solution for managing learning in Physics material</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 X 50	Material: hardware- based learning media including teaching aids and KIT Library: Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press	5%
4	<ol> <li>Analyzing various hardware-based learning media including teaching aids and physics learning KITs</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Describe the types and functions of learning media in the form of KIT and teaching aids</li> <li>Evaluate the feasibility of learning media from the aspects of theoretical validity, practicality and security in learning.</li> <li>Planning the procurement of learning media as a solution for managing learning in Physics material</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 X 50	Material: hardware- based learning media including teaching aids and KIT Library: Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press	5%

5	<ol> <li>Developing hardware-based learning media including teaching aids and physics learning KIT</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Produce learning media in the form of teaching aids or kits as a solution for managing learning on Physics material</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Team based project 2 X 50	Material: hardware- based learning media including iteaching aids and KIT Library: Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press	5%
	teaching aids and physics learning KIT 2.Have a responsible attitude towards performance in Physics learning	managing learning on Physics material 2.Be present on time according to the lecture schedule 3.Collect assignments on	Assessment : Participatory Activities, Project Results Assessment / Product		media including teaching aids and KIT <b>Library:</b> Isnawati. 2015. Simple Material Based Learning Media. Surabaya:	
					Series (Vol. 1233, No. 1, p. 012032). IOP Publishing.	

IOP Publishing.
--------------------

7	<ol> <li>Developing hardware-based learning media including teaching aids and physics learning KIT</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Produce learning media in the form of teaching aids or kits as a solution for managing learning on Physics material</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Team based project, 2 X 50 workshops	Material: nardware- based earning media ncluding iceaching aids and KIT Library: Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press Material: Development of Physics	5%
					& Rosana, D. (2019, June). Physics Props Development based on Personal Desk Laboratory System to Improve Creative Thinking Ability and Students' Scientific Attitude. In Journal of Physics: Conference	
					Series (Vol. 1233, No. 1, p. 012032). IOP Publishing.	

8	<ol> <li>Developing hardware-based learning media including teaching aids and physics learning KIT</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Able to present and be responsible for the media products produced</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Project Results Assessment / Product Assessment	Team based project, Presentation 2 X 50	Material: hardware- based learning media including teaching aid and KIT Library: Isnawati. 2015. Simpl Material Based Learning Media. Surabaya: Jaudar PressMaterial: Development of Physics Learning Teaching Ai Library: Wahyuni, H. & Rosana, I (2019, June Physics Pro Development based on Personal Desk Laboratory' System to Improve Creative Thinking Ability and Students' Scientific Attitude. In Journal of Physics: Conference Series (Vol. 1233, No. 1, p. 012032). IOP Publishing.	e s t ds 5, , ,
9	<ol> <li>Describe software-based learning media</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Can explain the use of software- based learning media in physics learning</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 x 50'	Material: IC based learning media <b>References</b> Heinich, R., Molenda. 1999. Instructional Media and Technologie for Learning USA: Prenti-	: s

10	<ol> <li>Analyze various software-based learning media including e- books, posters/banners, and interactive slides</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Can analyze various software- based learning media including e- books, posters/banners, and interactive slides.</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 x 50'	ba le m R H H H M M 15 In M M D U O O O O O O O O O O O O O O O O O O	laterial: ICT- ased aarning hedia leferences: leinich, R., folenda. 999. Instructional dedia and ledia and ledia and folenta. SA: Prentice lall laterial: pevelopment f cligital ooks leferences: usanti, N., ennita, Y., & zihar, A. 2020). Development f contextual ased lectronic lobal varming nodules sing flipbook pplications s physics periodia in high chools. ournal of iducational	5%
11	<ol> <li>Analyzing various software-based learning media including learning websites and animated learning media</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Can analyze various software- based learning media including learning websites and animated learning media.</li> <li>Be present on time according to the lecture schedule</li> <li>Collect assignments on time</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 x 50'	4( Mababa le m R R H H M 19 19 19 10 19 10 10 10 10 10 10 10 10 10 10 10 10 10	ciences, (3), 541. <b>Interial:</b> ICT- ased earning nedia <b>teferences:</b> leinich, R., tolenda. 999. nstructional Media and rechnologies or Learning. ISA: Prentice Iall <b>Interial:</b> Nevelopment f learning nimations <b>teferences:</b> Vati, M., Iartini, S., likmah, N., & Ahtari, S. 2018, Sarring nedia using D cartoon. In ournal of Physics: Conference ieries (Vol. 97, No. 1, p. 12044). IOP Publishing.	5%

12	1.Develop	1.Can analyze	Criteria:	Team based project	Material: ICT-	5%
	software-based	various software-	Non test	2 x 50'	based	
	physics learning	based learning			learning	
	media using the	media including	Form of		media	
	PPT application,	learning websites	Assessment :		References:	
			Participatory		Heinich, R.,	
	Canva, PDF Flip	and animated	Activities		Molenda.	
	Pro or other	learning media.			1999.	
	licensed	<ol><li>Be present on time</li></ol>			Instructional	
	applications.	according to the			Media and	
	2.Have a	lecture schedule			Technologies	
	responsible	3.Collect			for Learning.	
	attitude towards	assignments on			USA: Prentice	
	performance in	time			Hall	
	Physics learning					
	media lectures				Material:	
					Development	
					of learning	
					animations	
					References:	
					Wati, M.,	
					Hartini, S.,	
					Hikmah, N., &	
					Mahtari, S.	
					(2018,	
					March).	
					Developing	
					physics	
					learning	
					media using	
					3D cartoon. In	
					Journal of	
					Physics:	
					Conference	
					Series (Vol.	
					997, No. 1, p.	
					012044). IOP	
					Publishing.	
					Tublishing.	
					Material:	
					Development	
					of digital	
					books	
					References:	
					Susanti, N.,	
					Yennita, Y., &	
					Azhar, A.	
					(2020).	
					Development	
					of contextual	
					based	
					electronic	
					global	
					warming	
					modules	
					using flipbook	
			1		applications	
			1		as physics	
			1		learning	
					media in high	
					schools.	
					Journal of	
					Educational	
			1		Sciences,	
				1	4(3), 541.	

13	1 David	1.0	Critoria	Team based project,	Material: ICT-	5%
13	1.Develop	1.Can analyze	Criteria: Non test		based	3%0
	software-based	various software-	NUIT LESL	workshop		
	physics learning	based learning		2 x 50'	learning	
	media using the	media including	Form of		media	
	PPT application,	learning websites	Assessment :		References:	
			Participatory		Heinich, R.,	
	Canva, PDF Flip	and animated	Activities, Project		Molenda.	
	Pro or other	learning media.	Results		1999.	
	licensed	<ol><li>Be present on time</li></ol>	Assessment /		Instructional	
	applications.	according to the	Product		Media and	
	2.Have a	lecture schedule	Assessment			
	responsible		Assessment		Technologies	
					for Learning.	
	attitude towards				USA: Prentice	
	performance in				Hall	
	Physics learning					
	media lectures				Material:	
					Development	
					of learning	
					animations	
					References:	
					Wati, M.,	
					Hartini, S.,	
					Hikmah, N., &	
					Mahtari, S.	
					(2018,	
					March).	
					Developing	
					physics	
					learning	
					media using	
					3D cartoon. In	
					Journal of	
					Physics:	
					Conference	
					Series (Vol.	
					997, No. 1, p.	
					012044). IOP	
					Publishing.	
					Material:	
					Development	
					of digital	
					books	
					References:	
					Susanti, N.,	
					Yennita, Y., &	
					Azhar, A.	
					(2020).	
					Development	
					of contextual	
					based	
					electronic	
					global	
					warming	
					modules	
					using flipbook	
					applications	
					as physics	
					learning	
					media in high	
					schools.	
					Journal of	
					Educational	
					Sciences,	
			1			
					4(3), 541.	

14		4	Quitauria	<b>Taaa b b b b b b b b b b</b>	Matarial IOT	
14	<ol> <li>Develop software-based physics learning media using the PPT application, Canva, PDF Flip Pro or other licensed applications.</li> <li>Have a responsible attitude towards performance in Physics learning media lectures</li> </ol>	<ol> <li>Can analyze various software- based learning media including learning websites and animated learning media.</li> <li>Be present on time according to the lecture schedule</li> </ol>	Criteria: Non test Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Team based project, workshop 2 x 50'	Material: ICT- based learning media <b>References:</b> Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall Material: Development of learning animations <b>References:</b> Wati, M., Hartini, S., Hikmah, N., & Mahtari, S. (2018, March). Developing physics learning anch). Developing physics learning media using 3D cartoon. In Journal of Physics: Conference Series (Vol. 997, No. 1, p. 012044). IOP Publishing. Material: Development of digital books <b>References:</b> Susanti, N., Yennita, Y., & Azhar, A. (2020). Development of contextual based electronic global warming modules using fliphook	5%
					based electronic global warming modules using flipbook applications as physics learning	
					media in high schools. Journal of Educational Sciences, 4(3), 541.	

15	1.Develop	1.Can analyze	Criteria:	Team based project,	Material: ICT-	5%
	software-based	various software-	Non test	workshop	based	
				2 x 50'	learning	
	physics learning	based learning	Form of	2 ^ 30		
	media using the	media including			media	
	PPT application,	learning websites	Assessment		References:	
	Canva, PDF Flip	and animated	Participatory		Heinich, R.,	
	· · · · ·		Activities, Project		Molenda.	
	Pro or other	learning media.	Results		1999.	
	licensed	<ol><li>Be present on time</li></ol>	Assessment /		Instructional	
	applications.	according to the	Product		Media and	
	2.Have a	lecture schedule	Assessment			
	responsible		Assessment		Technologies	
					for Learning.	
	attitude towards				USA: Prentice	
	performance in				Hall	
	Physics learning					
	media lectures				Material:	
	media lectares					
					Development	
					of learning	
					animations	
					References:	
					Wati, M.,	
					Hartini, S.,	
					Hikmah, N., &	
					Mahtari, S.	
					(2018,	
					March).	
					Developing	
					physics	
					learning	
					media using	
					3D cartoon. In	
					Journal of	
					Physics:	
					Conference	
					Series (Vol.	
					997, No. 1, p.	
					012044). IOP	
					Publishing.	
					Material:	
					Development	
					of digital	
					books	
					References:	
					Susanti, N.,	
					Yennita, Y., &	
					Azhar, A.	
					(2020).	
					Development	
					of contextual	
					based	
					electronic	
					global	
					warming	
					modules	
					using flipbook	
					applications	
					applications	
					as physics	
					learning	
					media in high	
					schools.	
					Journal of	
					Educational	
					Sciences,	
					4(3), 541.	

16	1.Develop	1.Can analyze	Criteria:	Team based project,	Material: ICT-	20%
	software-based	various software-	Non test	Product presentation	based	
	physics learning	based learning		2 x 50'	learning	
	media using the	media including	Form of		media	
			Assessment :		References:	
	PPT application,	learning websites	Project Results		Heinich, R.,	
	Canva, PDF Flip	and animated	Assessment /		Molenda.	
	Pro or other	learning media.	Product		1999.	
	licensed	2.Be present on time	Assessment			
	applications.	according to the	Assessment		Instructional	
	2.Have a	lecture schedule			Media and	
	responsible	lecture schedule			Technologies	
					for Learning.	
	attitude towards				USA: Prentice	
	performance in				Hall	
	Physics learning					
	media lectures				Material:	
					Development	
					of learning	
					animations	
					References:	
					Wati, M.,	
					Hartini, S.,	
					Hikmah, N., &	
					Mahtari, S.	
					(2018,	
					March).	
					Developing	
					physics	
					learning	
					media using	
					3D cartoon. In	
					Journal of	
					Physics:	
					Conference	
					Series (Vol.	
					997, No. 1, p.	
					012044). IOP	
					Publishing.	
					Material:	
					Development	
					of digital	
					books	
					References:	
					Susanti, N.,	
					Yennita, Y., &	
					Azhar, A.	
					(2020).	
					Development	
					of contextual	
					based	
					electronic	
					global	
					warming	
					modules	
					using flipbook	
					applications	
					as physics	
					learning	
					media in high	
					schools.	
					Journal of	
					Educational	
					Sciences,	
					4(3), 541.	
			1		T(0), 0+1.	

## **Evaluation Percentage Recap: Project Based Learning**

No	Evaluation	Percentage
1.	Participatory Activities	35%
2.	Project Results Assessment / Product Assessment	50%
3.	Portfolio Assessment	15%
		100%

## Notes

- 1. 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.2. 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.
- 3. **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.
- 4. Subject Sub-PO (Sub-PO) is a capability that is specifically described from the PO that can be measured or observed and is the
- Indicators for assessing abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence. 5.

- 6. 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.
- 7. Forms of assessment: test and non-test.
- 8. 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.
- 10. Learning materials are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 11. 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%.
- 12. TM=Face to face, PT=Structured assignments, BM=Independent study.