	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 Learning Media	8420302287	Compulsory Study Program Subjects	T=2	P=0	ECTS=3.18	4	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Project Based Learning**	
Program Learning Outcomes (PLO)	**PLO study program that is charged to the course**	
	Program Objectives (PO)	
	PO - 1	Examining various media and teaching aids in learning
	PO - 2	Develop learning props
	PO - 3	Develop learning posters/banners
	PO - 4	Developing presentation learning media
	PO - 5	Developing learning Ebooks
	PO - 6	Develop learning websites and weblogs
	PO - 7	Developing animated learning media

PLO-PO Matrix

P.O
PO-1
PO-2
PO-3
PO-4
PO-5
PO-6
PO-7

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																
PO-2																
PO-3																
PO-4																
PO-5																
PO-6																
PO-7																

Short Course Description	This course examines the meaning, function, role and types of learning media; choose relevant learning media; as well as the basic concept of media development, which starts from planning by analyzing needs, design by making prototypes, and development.	
References	**Main :**	

1. Fenrich, P. 1997. Practical Guidelines For Creating Instructional Multimedia Application . USA: Harcourt Brace College Publisher
2. Heinich, R., Molenda. 1999. Instructional Media and Technologies forLearning . USA: Prentice Hall
3. Reynolds, Karen E. 1996. Technology for the teaching and learning science . Boston: Allyn and Bacon
4. Arsyad, Azhar, 2009. Media pembelajaran . Jakarta: Raja Grafindo Persada
5. Munadi, Yudhi. 2008. Media pembelajaran: sebuah pendekatan baru . Jakarta: Gaung Persada, 2008
6. Isnawati. 2015. Media Pembelajaran Berbasis Bahan Sederhana . Surabaya: Jaudar Press

Supporters:

1. Rusli M, Hermawan D dan Supuwiningsih N N. 2017. Multimedia Pembelajaran Yang Inovatif. Yogyakarta: Andi Offset.
2. Surjono, H. D. 2019. Multimedia pembelajaran interaktif konsep dan pengembangan. Yogyakarta: UNY Press
3. 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.
4. 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.
5. Wijaya, R. E., Mustaji, M., & Sugiharto, H. (2021). Development of Mobile Learning in Learning Media to Improve Digital Literacy and Student Learning Outcomes in Physics Subjects: Systematic Literature Review. Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences, 4(2), 3087-3098.
6. Wahyuni, H. S., & 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.

Supporting lecturer

Drs. Imam Sucahyo, M.Si.
Abd. Kholiq, S.Pd., M.T.
Mita Anggaryani, M.Pd., Ph.D.
Dr. Muhammad Satriawan, M.Pd.
Muhammad Habibbulloh, M.Pd.
Dr. Oka Saputra, M.Pd

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	Describe the basic concepts of learning media including the meaning, types, functions and principles of using learning media	1.Explain the meaning of media 2.Explain the types/classifications of Physics learning media 3.Describe the relevance between media types and their functions. 4.Identify the benefits of media from various examples of the Physics learning process 5.Be present on time according to the lecture schedule 6.Collect assignments on time	**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. **References:** *Arsyad, Azhar, 2009. Learning media. Jakarta: Raja Grafindo Persada*	5%
2	1.Understand the development principles and procedures for developing Physics learning media 2.Have a responsible attitude towards performance in Physics learning media lectures	1.Explain the principles of learning media development 2.Describe the procedures for developing learning media 3.Comparing several learning media development procedures in learning research. 4.Be present on time according to the lecture schedule 5.Collect assignments on time	**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. **Reference:** *Surjono, HD 2019. Interactive learning multimedia concepts and development. Yogyakarta: UNY Press*	0%

3	1. Analyzing various hardware-based learning media including teaching aids and physics learning KITs 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Describe the types and functions of learning media in the form of KIT and teaching aids 2. Evaluate the feasibility of learning media from the aspects of theoretical validity, practicality and security in learning. 3. Planning the procurement of learning media as a solution for managing learning in Physics material 4. Be present on time according to the lecture schedule 5. Collect assignments on time	**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	1. Analyzing various hardware-based learning media including teaching aids and physics learning KITs 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Describe the types and functions of learning media in the form of KIT and teaching aids 2. Evaluate the feasibility of learning media from the aspects of theoretical validity, practicality and security in learning. 3. Planning the procurement of learning media as a solution for managing learning in Physics material 4. Be present on time according to the lecture schedule 5. Collect assignments on time	**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	1. Developing hardware-based learning media including teaching aids and physics learning KIT 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Produce learning media in the form of teaching aids or kits as a solution for managing learning on Physics material 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**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 teaching aids and KIT **Library:** *Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press* **Material:** Development of Physics Learning Teaching Aids **Library:** *Wahyuni, HS, & 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.*	5%

6	1. Developing hardware-based learning media including teaching aids and physics learning KIT 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Produce learning media in the form of teaching aids or kits as a solution for managing learning on Physics material 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**Criteria:** Non test **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Team based project, 2 X 50 workshops		**Material:** hardware-based learning media including teaching aids and KIT **Library:** *Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press* **Material:** Development of Physics Learning Teaching Aids **Library:** *Wahyuni, HS, & 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.*	5%

7	1. Developing hardware-based learning media including teaching aids and physics learning KIT 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Produce learning media in the form of teaching aids or kits as a solution for managing learning on Physics material 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**Criteria:** Non test **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Team based project, 2 X 50 workshops		**Material:** hardware-based learning media including teaching aids and KIT **Library:** *Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press* **Material:** Development of Physics Learning Teaching Aids **Library:** *Wahyuni, HS, & 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.*	5%

8	1. Developing hardware-based learning media including teaching aids and physics learning KIT 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Able to present and be responsible for the media products produced 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**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 aids and KIT **Library:** *Isnawati. 2015. Simple Material Based Learning Media. Surabaya: Jaudar Press* **Material:** Development of Physics Learning Teaching Aids **Library:** *Wahyuni, HS, & 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.*	15%
9	1. Describe software-based learning media 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can explain the use of software-based learning media in physics learning 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**Criteria:** Non test **Form of Assessment** : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 x 50'		**Material:** ICT-based learning media **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall*	5%

10	1. Analyze various software-based learning media including e-books, posters/banners, and interactive slides 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can analyze various software-based learning media including e-books, posters/banners, and interactive slides. 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**Criteria:** Non test **Form of Assessment** : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 x 50'		**Material:** ICT-based learning media **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall* **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.*	5%
11	1. Analyzing various software-based learning media including learning websites and animated learning media 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can analyze various software-based learning media including learning websites and animated learning media. 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**Criteria:** Non test **Form of Assessment** : Participatory Activities, Portfolio Assessment	Presentations, discussions and assignments 2 x 50'		**Material:** ICT-based learning media **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall* **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.*	5%

12	1. Develop software-based physics learning media using the PPT application, Canva, PDF Flip Pro or other licensed applications. 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can analyze various software-based learning media including learning websites and animated learning media. 2. Be present on time according to the lecture schedule 3. Collect assignments on time	**Criteria:** Non test **Form of Assessment** : Participatory Activities		Team based project 2 x 50'	**Material:** ICT-based learning media **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall* **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.*	5%

13	1. Develop software-based physics learning media using the PPT application, Canva, PDF Flip Pro or other licensed applications. 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can analyze various software-based learning media including learning websites and animated learning media. 2. Be present on time according to the lecture schedule	**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 **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall* **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.*	5%

14	1. Develop software-based physics learning media using the PPT application, Canva, PDF Flip Pro or other licensed applications. 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can analyze various software-based learning media including learning websites and animated learning media. 2. Be present on time according to the lecture schedule	**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 **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall* **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.*	5%

15	1. Develop software-based physics learning media using the PPT application, Canva, PDF Flip Pro or other licensed applications. 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can analyze various software-based learning media including learning websites and animated learning media. 2. Be present on time according to the lecture schedule	**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 **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall* **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.*	5%

16	1. Develop software-based physics learning media using the PPT application, Canva, PDF Flip Pro or other licensed applications. 2. Have a responsible attitude towards performance in Physics learning media lectures	1. Can analyze various software-based learning media including learning websites and animated learning media. 2. Be present on time according to the lecture schedule	**Criteria:** Non test **Form of Assessment** : Project Results Assessment / Product Assessment		Team based project, Product presentation 2 x 50'	**Material:** ICT-based learning media **References:** *Heinich, R., Molenda. 1999. Instructional Media and Technologies for Learning. USA: Prentice Hall* **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.*	20%

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 final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **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.

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.
9. **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.