	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Master of Science Education Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Development of Integrated Science Learning	8410102132	Compulsory Study Program Subjects	T=2	P=0	ECTS=4.48	1	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. Eko Hariyono, S.Pd., M.Pd.

Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)

PLO study program which is charged to the course

Program Objectives (PO)

PO - 1	Mastering knowledge and learning design based on curriculum integration models recommended by Fogarty, STEM, and SETS in the field of science to improve the quality of professional practice through the TPACK (Technological, Pedagogical, and Content Knowledge) framework to produce creative, original and proven in the field of education.
PO - 2	Design and develop innovative science learning tools (RPP, teaching materials, LKPD, media, and/or assessment instruments) to solve learning problems and improve the quality of science learning.

PLO-PO Matrix

P.O
PO-1
PO-2

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																

Short Course Description	This course facilitates students' understanding of 10 curriculum integration models, namely fragmented, connected, nested, sequenced, shared, webbed, threaded, integrated, immersed, and networked, STEM, and STSE and exercises in implementing curriculum integration (developing learning tools and simulate it) in learning/lectures in class. Thus, this course provides students with learning experiences to develop competency in designing meaningful integrated curricula and being able to implement them in science learning.

References

Main :

1. Fogarty, R. (1991) dan (2011). How to integrate the curricula. Palatine, Illinois: IRI/Skylight Publishing, Inc.
2. Fogarty, R. & Stoehr, J. (2008). Integrating curricula with multiple intellegences. Second Edition. California: Corwin Press A Sage Company.
3. Hewitt, P. G., Lyous, S. (2007). Conceptual integrated science. San Francisco: Addison Wesley.
4. MacLeod, K. A. (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.
5. Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Fransisco: John Wiley & Sons.

Supporters:

1. Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Jurnal Pendidikan IPA Indonesia. 9. 248-256. 10.15294/jpii.v9i2.23208.
2. Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Pengembangan Bahan Ajar IPA Berbasis Science Environment Technology and Society (SETS) Untuk Melatihkan Keterampilan Berpikir Kritis Siswa Kelas IV SDN Tanah Kalikedinding 1/251. Jurnal of Education and Development. Vol.8 No.2.1 Edisi Mei 2020.

Supporting lecturer	Prof. Dr. Suyono, M.Pd. Prof. Dr. Hj. Rudiana Agustini, M.Pd. Dr. Rinie Pratiwi Puspitawati, M.Si. Prof.Dr. Wahono Widodo, M.Si.

Week-	Final abilities of each learning	Evaluation	Help Learning, Learning methods, Student Assignments, [Estimated time]	Learning materials [References]	Assessment Weight (%)

	stage (Sub-PO)	Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** Accuracy of description and analysis results **Form of Assessment** : Test	Lecturer presentations, discussions, studying models and implementation of integrated science learning 100	study models and implementation of integrated science learning from various 100 learning sources	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	5%

2	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** Accuracy of descriptions and analysis results in PPT **Form of Assessment** : Project Results Assessment / Product Assessment, Test	study models and implementation of integrated science learning, develop PPT according to 100 topic divisions	study models and implementation of integrated science learning from various learning sources, develop PPT according to topic, upload on LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	7%

3	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** Accuracy of descriptions and analysis results in PPT **Form of Assessment** : Project Results Assessment / Product Assessment	study models and implementation of integrated science learning, develop PPT according to 100 topic divisions	study models and implementation of integrated science learning from various learning sources, develop PPT according to topic, upload on LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	8%

4	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** 1. Analysis results in PPT 2. Depth of questions, statements, arguments, logic **Form of Assessment** : Participatory Activities, Tests	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by 100 discussions	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by discussion on LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	7%

5	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** 1. Analysis results in PPT 2. presentation skills, responding, asking, answering, arguing, giving ideas, opinions. **Form of Assessment** : Participatory Activities, Tests	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by 100 discussions	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by discussion on LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	7%

6	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** 1. Analysis results in PPT 2. presentation skills, responding, asking, answering, arguing, giving ideas, opinions. **Form of Assessment** : Participatory Activities, Tests	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by 100 discussions	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by discussion on LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	4%

7	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** 1. Analysis results in PPT 2. presentation skills, responding, asking, answering, arguing, giving ideas, opinions. **Form of Assessment** : Participatory Activities, Tests	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by 100 discussions	PPT presentation of the results of concept analysis and implementation of integrated science learning according to topic division followed by discussion on LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	5%

8	Analyze the concept and implementation of an integrated science learning approach	1. explains integrated science learning models 2. analyze the implementation of integrated science learning from relevant journal articles	**Criteria:** 1. Analysis results in PPT 2. presentation skills, responding, asking, answering, arguing, giving ideas, opinions. **Form of Assessment** : Participatory Activities, Tests	UTS 100	UTS 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	5%

9	Developing science learning tools with an integrated science learning approach	1. designing integrated science learning mapping according to the chosen integration model 2. develop integrated science LKPD according to the chosen integration model 3. develop lesson plans/teaching modules according to the chosen integration model 4. develop assessment instruments according to the chosen integration model and according to thesis research ideas	**Criteria:** Quality (content, construction, appearance, language) of learning devices according to the chosen integration model **Form of Assessment** : Project Results Assessment / Product Assessment	Lecturer presentation and discussion about the steps for designing science learning tools, especially the integrated science learning approach, discussion, followed by the task of creating science learning tools with an integrated science learning approach according to thesis research ideas 100	Lecturer presentation and discussion about the steps for designing science learning tools, especially the integrated science learning approach, discussion, followed by the task of creating science learning tools with an integrated science learning approach according to thesis research ideas, mediated by LMS (upload assignments on SIDIA LMS) 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	7%

10	Developing science learning tools with an integrated science learning approach	1. designing integrated science learning mapping according to the chosen integration model 2. develop integrated science LKPD according to the chosen integration model 3. develop lesson plans/teaching modules according to the chosen integration model 4. develop assessment instruments according to the chosen integration model and according to thesis research ideas	**Criteria:** Quality (content, construction, appearance, language) of learning devices according to the chosen integration model **Form of Assessment** : Project Results Assessment / Product Assessment	Create science learning tools with an integrated science learning approach according to 100 thesis research ideas	Create science learning tools with an integrated science learning approach according to thesis research ideas (upload assignments to LMS SIDIA) 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	7%

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12	Developing science learning tools with an integrated science learning approach	1. designing integrated science learning mapping according to the chosen integration model 2. develop integrated science LKPD according to the chosen integration model 3. develop lesson plans/teaching modules according to the chosen integration model 4. develop assessment instruments according to the chosen integration model and according to thesis research ideas	**Criteria:** Quality (content, construction, appearance, language) of learning devices according to the chosen integration model **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Presentation of the results of developing learning tools according to the chosen integration model, discussion and reflection. 100	Presentation of the results of the development of learning tools according to the chosen integration model, discussion and reflection, mediated by the LMS (upload assignments to the SIDIA LMS) 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	8%

13	Developing science learning tools with an integrated science learning approach	1. designing integrated science learning mapping according to the chosen integration model 2. develop integrated science LKPD according to the chosen integration model 3. develop lesson plans/teaching modules according to the chosen integration model 4. develop assessment instruments according to the chosen integration model and according to thesis research ideas	**Criteria:** Quality (content, construction, appearance, language) of learning devices according to the chosen integration model **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Presentation of the results of developing learning tools according to the chosen integration model, discussion and reflection. 100	Presentation of the results of the development of learning tools according to the chosen integration model, discussion and reflection, mediated by the LMS (upload assignments to the SIDIA LMS) 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	8%

14	Implementing science learning with an integrated science learning approach according to the design results	1. the accuracy of science learning with an integrated science learning approach in its design 2. video quality includes: 1) display quality; 2) sound quality; 3) labels: title, phase; 4) duration (maximum 25-30 minutes)	**Criteria:** Quality (content, construction, appearance, language) of learning devices according to the chosen integration model **Form of Assessment** : Project Results Assessment / Product Assessment	Recording real learning or peer teaching using learning devices according to the chosen integration model, video editing. 100	Upload video assignments resulting from implementation in LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	5%

15	Implementing science learning with an integrated science learning approach according to the design results	1. the accuracy of science learning with an integrated science learning approach in its design 2. video quality includes: 1) display quality; 2) sound quality; 3) labels: title, phase; 4) duration (maximum 25-30 minutes)	**Criteria:** Quality (content, construction, appearance, language) of learning devices according to the chosen integration model **Form of Assessment** : Project Results Assessment / Product Assessment	Recording real learning or peer teaching using learning devices according to the chosen integration model, video editing. 100	Upload video assignments resulting from implementation in LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	5%

16	Implementing science learning with an integrated science learning approach according to the design results	1. the accuracy of science learning with an integrated science learning approach in its design 2. video quality includes: 1) display quality; 2) sound quality; 3) labels: title, phase; 4) duration (maximum 25-30 minutes)	**Criteria:** Quality (content, construction, appearance, language) of learning devices according to the chosen integration model **Form of Assessment** : Project Results Assessment / Product Assessment	Recording real learning or peer teaching using learning devices according to the chosen integration model, video editing. 100	Upload video assignments resulting from implementation in LMS SIDIA 100	**Material:** 10 integration models **References:** *Fogarty, R. & Stoehr, J. (2008). Integrating curriculum with multiple intelligences. Second Edition. California: Corwin Press A Sage Company.* **Material:** STSE **References:** *MacLeod, KA (2012). Integrating STSE into Physics Teacher Education. A Thesis for Doctoral Degree, Toronto University.* **Material:** STEM **Bibliography:** *Felder, R & Brent, R. (2016). Teaching and Learning STEM: A Practical Guide. San Francisco: John Wiley & Sons.* **Material:** Integration with social issues **References:** *Widodo, Wahono & Sudibyo, Elok & Suryanti, Suryanti & Sari, Dhita & Inzanah, I. & Setiawan, Beni. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Science Education Journal. 9. 248-256. 10.15294/jpii.v9i2.23208.* **Material:** STSE Implementation **References:** *Indang Mustiko Rini, Wahono Widodo, Widowati Budijastuti (2020) Development of Science Teaching Materials Based on Science Environment Technology and Society (SETS) to Train Critical Thinking Skills for Class IV Students at SDN Tanah Kalikedinding 1/251. Journal of Education and Development. Vol.8 No.2.1 May 2020 Edition.*	5%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	22%
2.	Project Results Assessment / Product Assessment	55.5%
3.	Test	22.5%
		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** 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.
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.