	Universitas Negeri Surabaya **Faculty of Postgraduate School,** **Vocational Education Doctoral Study Program**	**Document Code**	

SEMESTER LEARNING PLAN

Courses		CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Learning Media and ICT Innovation		8300102224		**T=2**	**P=0**	**ECTS=5.04**	1	May 13, 2023

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	....	....	Dr. Ratna Suhartini, M.Si.

Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**	
	Program Objectives (PO)	
	PO - 1	CLO1. Able to prepare reports on learning media and ICT innovations including theoretical studies and/or experiments in the field of vocational education and science which are expected to be in the form of draft articles published in international seminars or reputable international journals
	PLO-PO Matrix	

P.O

PO-1

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																

Short Course Description	This course studies the basic concepts of Learning Media, ICT based on big data and machine learning to design, create, implement and evaluate effective and efficient learning media, as well as the application of ICT in vocational learning.

References	**Main :**	

1. (Author(s): Lawrence Tomei, Information Communication Technologies for Enhanced Education and Learning: Advanced Applications and Developments, Series: Advances in Information and Communication Technology Education. Publisher: Information Science Reference, Year: 2008. ISBN: 1605661503,9781605661506,9781605661513
2. 2. Ben Kei Daniel (Editor), Big Data and Learning Analytics in Higher Education Current Theory and Practice, ISBN 978-3-319-06519-9 ISBN 978-3-319-06520-5 (eBook) DOI 10.1007/978-3-319-06520-5. Library of Congress Control Number: 2016947402. © Springer International Publishing Switzerland 2017
3. 3. Ben Williamson, Big Data in Education The digital future of learning, policy and practice. SAGE Publications Asia-Pacific Pte Ltd 3 Church Street #10-04 Samsung Hub. Singapore 049483. First published 2017

Supporters:

1. 4. Ana Azevedo, José Manuel Azevedo, James Onohuome Uhomoibhi, Ebba Ossiannilsson. Advancing the Power of Learning Analytics and Big Data in Education. A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series. Published in the United States of America by IGI Global Information Science Reference (an imprint of IGI Global) 701 E. Chocolate Avenue Hershey PA, USA 17033 Copyright c 2021
2. 5. Nilanjan Dey, Sanjeev Wagh, Parikshit N. Mahalle, Mohd. Shafi Pathan. Applied Machine Learning for Smart Data Analysis. CRC Press Taylor & Francis Group 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-2742 © 2019 by Taylor & Francis Group, LLC
3. 6. Jurnal International terindeks yang relevan

Supporting lecturer	Dr. Rina Harimurti, S.Pd., M.T. Dr. Lilik Anifah, S.T., M.T.

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	Conduct analysis and synthesis of innovative ICT learning media in education	- produce analysis and synthesis of work that is creative, original, tested, and useful for scientific development	**Criteria:** Oral test **Form of Assessment**: Participatory Activities	- -	Analysis of ICT 2x50 learning media	**Material:** Learning media analysis **Bibliography:** *(Author(s): Lawrence Tomei, Information Communication Technologies for Enhanced Education and Learning: Advanced Applications and Developments, Series: Advances in Information and Communication Technology Education. Publisher: Information Science Reference, Year: 2008. ISBN: 1605661503,9781605661506,9781605661513*	10%

				-			
2	Carry out analysis and synthesis of ICT learning media in the vocational field	produce analysis and synthesis of work that is creative, original, tested, and useful for scientific development	**Criteria:** 1. Oral test 2. Performance test **Form of Assessment**: Participatory Activities	- -	Analysis of ICT learning media in the vocational field 4x50	**Material:** Analysis & synthesis of learning media **Bibliography:** (*Author(s): Lawrence Tomei, Information Communication Technologies for Enhanced Education and Learning: Advanced Applications and Developments, Series: Advances in Information and Communication Technology Education. Publisher: Information Science Reference, Year: 2008. ISBN: 1605661503,9781605661506,9781605661513*	10%
3	Carry out analysis and synthesis of ICT learning media in the vocational field	produce analysis and synthesis of work that is creative, original, tested, and useful for scientific development	**Criteria:** 1. Oral test 2. Performance test **Form of Assessment**: Project Results Assessment / Product Assessment	- -	Analysis of ICT learning media in the vocational field 4x50	**Material:** Analysis & synthesis of vocational learning media. **Library:** *(Author(s): Lawrence Tomei, Information Communication Technologies for Enhanced Education and Learning: Advanced Applications and Developments, Series: Advances in Information and Communication Technology Education. Publisher: Information Science Reference, Year: 2008. ISBN: 1605661503,9781605661506,9781605661513*	20%
4	Design ideas/schemes/flow diagrams regarding ICT media to solve vocational education problems	Ideas/schemes/flow diagrams regarding ICT media to solve vocational education problems	**Criteria:** 1. Test Write description 2. Oral test **Form of Assessment**: Portfolio Assessment	- -	Design a 2x50 flow chart	**Material:** Learning media flowchart **Library:** (*Author(s): Lawrence Tomei, Information Communication Technologies for Enhanced Education and Learning: Advanced Applications and Developments, Series: Advances in Information and Communication Technology Education. Publisher: Information Science Reference, Year: 2008. ISBN: 1605661503,9781605661506,9781605661513*	10%
5	Design ideas/schemes/flow diagrams regarding innovative ICT media to solve vocational education problems	Ideas/schemes/flow diagrams regarding ICT media to solve vocational education problems	**Criteria:** 1. essay writing test 2. Oral test **Form of Assessment**: Portfolio Assessment	- -	Design a flowchart for solving a 2x50 problem	**Material:** Learning media flowchart **References:** *2. Ben Kei Daniel (Editor), Big Data and Learning Analytics in Higher Education Current Theory and Practice, ISBN 978-3-319-06519-9 ISBN 978-3-319-06520-5 (eBook) DOI 10.1007/978-3-319-06520-5. Library of Congress Control Number: 2016947402. © Springer International Publishing Switzerland 2017*	10%
6	Design ideas/schemes/flow diagrams regarding innovative ICT media to solve vocational education problems	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1. essay writing test 2. Oral test 3. performance test **Form of Assessment**: Portfolio Assessment	- -	Design a flowchart for solving a 2x50 problem	**Material:** Analysis & synthesis of vocational learning media **References:** *3. Ben Williamson, Big Data in Education The digital future of learning, policy and practice. SAGE Publications Asia-Pacific Pte Ltd 3 Church Street #10-04 Samsung Hub. Singapore 049483. First published 2017*	0%
7	Design ideas/schemes/flow diagrams regarding innovative ICT media to solve vocational education problems	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1. essay writing test 2. Oral test 3. performance test **Form of Assessment**: Project Results Assessment / Product Assessment, Portfolio Assessment	- -	Design a flowchart for solving a 2x50 problem	**Material:** Flow diagram about innovative ICT media **References:** *3. Ben Williamson, Big Data in Education The digital future of learning, policy and practice. SAGE Publications Asia-Pacific Pte Ltd 3 Church Street #10-04 Samsung Hub. Singapore 049483. First published 2017*	10%
8			**Form of Assessment**: Test	- -	- -		0%
9	Make a study or evaluation of various ICT media used in vocational learning. (can be part of the dissertation).	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1. Oral test 2. performance test	- -	evaluation of various ICT media used in 2x50 vocational learning	**Material:** study or evaluation of various ICT media **References:** *3. Ben Williamson, Big Data in Education The digital future of learning, policy and practice. SAGE Publications Asia-Pacific Pte Ltd 3 Church Street #10-04 Samsung Hub. Singapore 049483. First published 2017*	0%
10	Carrying out analysis and synthesis regarding the application of machine learning, AI, and big data in education	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1. Oral test 2. performance test	- -	evaluation of various ICT media used in 2x50 vocational learning	**Material:** Applications of machine learning, AI and big data **References:** *4. Ana Azevedo, José Manuel Azevedo, James Onohuome Uhomoibhi, Ebba Ossiannilsson. Advancing the Power of Learning Analytics and Big Data in Education. A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series. Published in the United States of America by IGI Global Information Science Reference (an imprint of IGI Global) 701 E. Chocolate Avenue Hershey PA, USA 17033 Copyright c 2021*	0%
11	Carrying out analysis and synthesis regarding the application of machine learning, AI, and big data in education	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1. Oral test 2. performance test	- -	evaluation of various ICT media used in 2x50 vocational learning	**Material:** machine learning applications, AI and big data **References:** *4. Ana Azevedo, José Manuel Azevedo, James Onohuome Uhomoibhi, Ebba Ossiannilsson. Advancing the Power of Learning Analytics and Big Data in Education. A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series. Published in the United States of America by IGI Global Information Science Reference (an imprint of IGI Global) 701 E. Chocolate Avenue Hershey PA, USA 17033 Copyright c 2021*	0%

12	Conduct analysis and synthesis regarding the application of machine learning, AI, and big data in education	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1.Oral test 2.performance test **Form of Assessment**: Project Results Assessment / Product Assessment	- 	evaluation of various ICT media used in 2x50 vocational learning	**Material:** machine learning applications, AI and big data **References:** 4. Ana Azevedo, José Manuel Azevedo, James Onohuome Uhomoibhi, Ebba Ossiannilsson. Advancing the Power of Learning Analytics and Big Data in Education. A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series. Published in the United States of America by IGI Global Information Science Reference (an imprint of IGI Global) 701 E. Chocolate Avenue Hershey PA, USA 17033 Copyright c 2021	10%
13	Conduct analysis and synthesis regarding the application of machine learning, AI, and big data in vocational education	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1.Oral test 2.performance test **Form of Assessment**: Project Results Assessment / Product Assessment	- -	evaluation of various ICT media used in 2x50 vocational learning	**Material:** machine learning applications, AI and big data **References:** 4. Ana Azevedo, José Manuel Azevedo, James Onohuome Uhomoibhi, Ebba Ossiannilsson. Advancing the Power of Learning Analytics and Big Data in Education. A volume in the Advances in Educational Technologies and Instructional Design (AETID) Book Series. Published in the United States of America by IGI Global Information Science Reference (an imprint of IGI Global) 701 E. Chocolate Avenue Hershey PA, USA 17033 Copyright c 2021	10%
14	Conduct analysis and synthesis regarding the application of machine learning, AI, and big data in vocational education	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1.Oral test 2.performance test **Form of Assessment**: Project Results Assessment / Product Assessment	- -	evaluation of various ICT media used in 2x50 vocational learning	**Material:** machine learning applications, AI, and big data **References:** 5. Nilanjan Dey, Sanjeev Wagh, Parikshit N. Mahalle, Mohd. Shafi Pathan. Applied Machine Learning for Smart Data Analysis. CRC Press Taylor & Francis Group 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-2742 © 2019 by Taylor & Francis Group, LLC	10%
15	Conduct analysis and synthesis regarding the application of machine learning, AI, and big data in vocational education	- produce work that is creative, original, tested and useful for scientific development	**Criteria:** 1.Oral test 2.performance test	- -	evaluation of various ICT media used in 2x50 vocational learning	**Material:** machine learning applications, AI, and big data **References:** 5. Nilanjan Dey, Sanjeev Wagh, Parikshit N. Mahalle, Mohd. Shafi Pathan. Applied Machine Learning for Smart Data Analysis. CRC Press Taylor & Francis Group 6000 Broken Sound Parkway NW, Suite 300 Boca Raton, FL 33487-2742 © 2019 by Taylor & Francis Group, LLC	0%
16							0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	20%
2.	Project Results Assessment / Product Assessment	55%
3.	Portfolio Assessment	25%
		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.