

Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Bachelor of Science Education Study Program

1Ces gram Document Code

SEMESTER LEARNING PLAN

			<u>.</u>	_																	
Courses			CODE					Cours	se Fan	nily		C	Credit	Wei	ght		SEME	STER		Comp Date	ilation
Seminar			8420102	142								т	=2 I	P=0	ECTS=3	.18		6			3, 2024
AUTHORIZAT	ION		SP Deve	loper							Cou	rse C	luste	r Coo	ordinator		Study Program Coordinator				
																	Prof. Dr. Erman, M.Pd.		Pd.		
Learning model	Case Studies		ļ								1										
Program	PLO study prog	gram tha	t is charg	ged to	the c	ourse															
Learning Outcomes	Program Objec	tives (PO	D)																		
(PLO)	PO - 1	Masterin formulati	g the basi ng procedi	ics of ural pr	makin oblem	g rese solviną	arch p g in the	roposa field c	als/artion of scier	cles in nce edu	the fie	eld of 1	scier	nce e	education	whie	ch refl	ects rea	asonir	ng abi	lities in
	PO - 2		strategic decisions based on data and information, including input, ideas, colleagues, references, and provide ideas for g various alternative solutions																		
	PO - 3	Respons	ible for the	e task o	of crea	ting an	d pres	enting	propo	sals an	d/or re	esearc	h arti	cles							
	PLO-PO Matrix																				
			P.O PO-1 PO-2 PO-3																		
	PO Matrix at th	e end of	each lear	rning	stage	(Sub-	PO)														
			P.O																		
				1	2	3	4	5	6	7	8	9	10)	11 12	2	13	14	15	1	6
		PO-1														_			<u> </u>	_	
		PO-2														_					
		PO-3						i										I			
Short Course Description	Mastering the ba education.	asics of w	riting artic	les in	sciend	ce edu	cation	that r	eflects	s reaso	ning a	abilitie	s in f	ormu	Ilating pro	ced	lural p	roblem	solvir	ng in :	science
References	Main :																				
	 Tim Jurn Tim. 200 Widodo, Tim Sem Tim Sem Widodo, 	5.Pedoma W. 2004. inar Nasio inar Nasio	an Penulisa Penulisan onal. 2013. onal. 2012.	an Skri Karya Prosio Prosio	psi Un Ilmiah ding So ding So	iiversita . Jakar eminar eminar	as Neg ta: Dir Nasio Nasio	jeri Šur ektorat nal Pe nal Pe	rabaya t PSMI ndidika ndidika	a. Surab P. an Sain an Sain	baya: l Is Tahi	un 20:	13. Sı	uraba	aya: Unes						
	Supporters:																				
Supporting lecturer	Dra. Martini, M.P. Prof.Dr. Wahono Dr. Elok Sudibyo, Prof. Dr. Erman, Dr. Siti Nurul Hidd Dr. Mohammad E Dr. Dyah Astriani Dr. Hasan Subek Beni Setiawan, S Tutut Nurita, S.P. Laily Rosciana, S An Nuril Maulida Enny Susiyawati, Dhita Ayu Perma Aris Rudi Purnon Wahyu Budi Sabb Muhamad Arif Ma	Widodo, I S.Pd.,M. M.Pd. ayati, S.Pd., M S.Pd., M. Pd., M.Pd. J., M.Pd. S.Pd., M.P Fauziah, S. S.Si., M.S ta Sari, S. ta Sari, S.	Pd. S.Pd., M.Pd. S.Pd., M.I .Pd. M.Pd. d., Ph.D. d. S.Pd., M.Pd., Pd., M.Pd., Si., M.Pd., Si., M.Pd.,	d. Ph.D. c. M.Sc.																	

w	Week-	Final abilities of each learning stage		ion	Learn Student	p Learning, ing methods, t Assignments, <mark>imated time]</mark>	Learning materials	Assessment Weight (%)
		(Sub-PO)	Indicator	Criteria & Form	Offline (<i>offline</i>)	Online (<i>online</i>)	[References]	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	Explain the latest trends in science education research in Indonesia and globally (learning, media, and assessment)	 Explains the latest trends in science education research in Indonesia and globally in the field of learning Explains the latest trends in science education research in Indonesia and globally in the media field Explains the latest trends in science education research in Indonesia and globally in the field of assessment 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities	Project-based Learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Current trends in science education research References: Akpan, B., Cavas, B., & Kennedy, T. (Eds.). (2023). Contemporary Issues in Science and Technology Education (Vol. 56). Springer Nature Switzerland Material: Research related to science learning References: Erman, E., Liliasari, L., Ramdani, M., & Wakhidah, N.	5%
						(2020). Addressing Macroscopic Issues: Helping Students Form Associations Between Biochemistry and Sports and Aiding Their Scientific Literacy. International Journal of Science and Mathematics Education, 18(5), 831–853	
						Material: Research related to science learning media References: Widodo, W., Sudibyo, E., Suryanti, S., Sari, DAP, Inzanah, I., & Setiawan, B. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Journal of Science Education, 9(2), 248–256	
						Material: Research related to assessment in science learning References: Susiyawati, E., Sudibyo, E., & Sari, D. (2021). Development and Validation of an Instrument for Assessing Middle School Students' Critical Thinking Skills. The International Journal of Assessment and Evaluation, 28(2), 1–13	

2	Understand the code of ethics for science education research with human subjects	 Developing research subject willingness instruments Fill out the research ethics application form 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Tests	Project-based Learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Research ethics with human subjects Reference: Resnik, DB (2018). The Ethics of Research with Human Subjects: Protecting People, Advancing Science, Promoting Trust (Vol. 74). Springer International Publishing Material: Research ethics in the field of science education References: Bazzul, J. (2016). Ethics and Science Education: How Subjectivity Matters. Springer International Publishing Material: RCR related to human subjects in research References: Horner, J., & Minifie, FD (2011). Research Ethics I: Responsible Conduct of Research (RCR) —Historical and Contemporary Issues Pertaining to Human and Animal Experimentation. Journal of Speech Language and Hearing Research, 54(1), S303–S329	5%
3	 Understand the procedures for writing data and references according to APA 7th ed. Implement procedural work to use reference management software to write references 	 Understand the procedures for writing data, quotations, tables and references according to environmental style (APA 7th ed.) Utilizing ICT to help write quotations and references with Mendeley software Conduct preliminary studies 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Tests	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: APA style 7th ed. References: Schwartz, BM, Landrum, RE, & Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE Material: Mendeley Reference: Gerritsen, CM (2018). Getting started with Mendeley. University of Twente	5%

4	Apply procedural work to write introductions and background research	 Write an introduction and research background based on urgency, research gaps, solutions offered, and research objectives Utilizing ICT to search for supporting references and background research Conduct preliminary studies 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Introduction and research background References: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge Material: Introduction and	5%
						Introduction and research background References: <i>Murray, R.</i> (2004). Writing for academic journals. Open University Press Material: Introduction and research background References: <i>Murray, R.</i> (2002). How to write a thesis. Open University Press	
5	Apply procedural work to determine the formulation of research problems	Write a research problem formulation that is appropriate with the introduction and background	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Introduction and research background References: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge Material:	5%
						Introduction and research background References: <i>Murray, R.</i> (2004). Writing for academic journals. Open University Press Material: Introduction and research background References: <i>Murray, R.</i> (2002). How to	
						write a thesis. Open University Press Material: Examples of research methods References: Erman, E., Liliasari, L., Ramdani, M., & Wakhidah, N. (2020). Addressing Macroscopic	
						Issues: Helping Students Form Associations Between Biochemistry and Sports and Aiding Their Scientific Literacy. International Journal of Science and Mathematics Education,	

I	I			l	1	l	18(5), 831–853	i
							Material: Examples of research methods References: Widodo, W., Sudibyo, E., Suryanti, S., Sari, DAP, Inzanah, I., & Setiawan, B. (2020). The Effectiveness of Gadget-Based Interactive Multimedia in Improving Generation Z's Scientific Literacy. Indonesian Journal of Science Education, 9(2), 248–256	
							Material: Examples of research methods References: Susiyawati, E., Sudibyo, E., & Sari, D. (2021). Development and Validation of an Instrument for Assessing Middle School Students' Critical Thinking Skills. The International Journal of Assessment and Evaluation, 28(2), 1–13	
	6	Apply procedural work to determine and write a literature review that is in accordance with the research problem formulation	 Write appropriate literature reviews to answer problems raised in research Utilize ICT to search for appropriate literature review references 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Introduction and research background References: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	10%
							Material: Introduction and research background References: Murray, R. (2004). Writing for academic journals. Open University Press Material: Introduction and research background References: Murray, R.	
							(2002). How to write a thesis. Open University Press	
	7	Apply procedural work to determine and write methods that suit the research problem formulation	 Write appropriate research methods to answer the problems raised in the research Utilize ICT to search for appropriate research method references 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Introduction and research background References: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	10%

1	1		l			Material:	
1						Introduction and	
						research background	
1						References:	
						Murray, R.	
						(2004). Writing for academic	
						journals. Open	
1						University Press	
						Material:	
						Introduction and	
						research	
						background References:	
						Murray, R.	
						(2002). How to write a thesis.	
						Open University	
						Press	
						Material:	
						Examples of	
						research	
						methods References:	
						Erman, E.,	
						Liliasari, L., Bamdani, M. R	
						Ramdani, M., & Wakhidah, N.	
						(2020).	
1						Addressing Macroscopic	
						Issues: Helping	
1						Students Form	
1						Associations Between	
1						Biochemistry	
1						and Sports and	
1						Aiding Their Scientific	
1						Literacy.	
1						International Journal of	
1						Science and	
1						Mathematics	
1						Education, 18(5), 831–853	
1						10(3), 031-853	
1						Material:	
						Examples of research	
						methods	
						References:	
						Widodo, W., Sudibyo, E.,	
						Suryanti, S.,	
						Sari, DAP,	
						Inzanah, I., & Setiawan, B.	
						(2020). The	
						Effectiveness of	
						Gadget-Based Interactive	
						Multimedia in	
						Improving Generation Z's	
						Scientific	
						Literacy.	
						Indonesian Journal of	
						Science	
						Education, 9(2),	
						248–256	
						Material:	
						Examples of	
						research methods	
						References:	
						Susiyawati, E.,	
						Sudibyo, E., & Sari, D. (2021).	
						Development	
						and Validation of an Instrument	
						for Assessing	
						Middle School	
						Students' Critical Thinking Skills.	
						The International	
						Journal of	
						Assessment and Evaluation,	
						28(2), 1–13	

8	-	Sub-CPMK 1 to 7	Criteria: UTS assessment rubric Form of Assessment : Practice/Performance, Test	Mid-Semester Evaluation/Mid- Semester Examination (UTS) 2 x 50'	-	Material: - Library:	0%
9	Communicate ideas for completing research proposals (seminars) by utilizing information technology	 Compile presentation files Present a research proposal Respond to presentations/questions Make revisions to articles/papers based on suggestions 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Research proposal Bibliography: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	5%
						Material: Systematics of research proposals References: Murray, R. (2002). How to write a thesis. Open University Press	
						Material: Contemporary issues in science education References: Akpan, B., Cavas, B., & Kennedy, T. (Eds.). (2023). Contemporary Issues in Science and Technology Education (Vol. 56). Springer Nature Switzerland	
						Material: Presentation of data, tables, figures, quotations and references References : Schwartz, BM, Landrum, RE, & Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE	

10	Communicate ideas for completing research proposals (seminars) by utilizing information technology	 Compile presentation files Present a research proposal Respond to presentations/questions Make revisions to articles/papers based on suggestions 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Project-based learning 2 x 50'	earning LMS	Material: Research proposal Bibliography: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	5%
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						Material: Presentation of data, tables, figures, quotations and references References : Schwartz, BM, Landrum, RE, & Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE	

11	Communicate	1.Compile presentation	Criteria:	Project-based	Asynchronous with	Material:	5%
	Communicate ideas for completing research proposals (seminars) by utilizing information technology	completing research proposals (seminars) by utilizing information technology 2.Present a research proposal according to assessment indicat (assessment rubric) 3.Respond to presentations/questions 4.Make revisions to according to assessment rubric) Form of Assessment Participatory Activitie Project Results	Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Project Results Assessment / Product	learning 2 x 50'	LMS 4 x 60'	Material: Research proposal Bibliography: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	340
						Material: Systematics of research proposals References: <i>Murray, R.</i> (2002). How to write a thesis. Open University Press	
						Material: Contemporary issues in science education References: Akpan, B., Cavas, B., & Kennedy, T. (Eds.). (2023). Contemporary Issues in Science and Technology Education (Vol. 56). Springer Nature Switzerland	
						Material: Presentation of data, tables, figures, quotations and references : Schwartz, BM, Landrum, RE, & Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE	

12	Communicate ideas for completing research proposals (seminars) by utilizing information technology	ideas for completing research proposals (seminars) by utilizing information tobernet a research 3.Respond to tobernet a research 3.Respond to	assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Project Results Assessment / Product	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Research proposal Bibliography: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	10%
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						Material: Presentation of data, tables, figures, quotations and references : Schwartz, BM, Landrum, RE, & Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE	

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13	Communicate ideas for completing research proposals (seminars) by utilizing information technology	 Compile presentation files Present a research proposal Respond to presentations/questions Make revisions to articles/papers based on suggestions 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Research proposal Bibliography: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	10%
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						(Eds.). (2023). Contemporary Issues in Science and Technology Education (Vol. 56). Springer Nature Switzerland	
						Material: Presentation of data, tables, figures, quotations and references References : Schwartz, BM,	
						Landrum, RE, & Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE	

14	Communicate ideas for completing research proposals (seminars) by utilizing information technology	 Compile presentation files Present a research proposal Respond to presentations/questions Make revisions to articles/papers based on suggestions 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Research proposal Bibliography: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge	10%
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						Material: Contemporary issues in science education References: Akpan, B., Cavas, B., & Kennedy, T. (Eds.). (2023). Contemporary Issues in Science and Technology Education (Vol.	
						56). Springer Nature Switzerland Material: Presentation of data, tables, figures, quotations and references References : Schwartz, BM, Landrum, RE, &	
						Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE	

15	Communicate ideas for completing research proposals (seminars) by utilizing information technology	 Compile presentation files Present a research proposal Respond to presentations/questions Make revisions to articles/papers based on suggestions 	Criteria: Accuracy and mastery according to assessment indicators (assessment rubric) Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment / State Sta	Project-based learning 2 x 50'	Asynchronous with LMS 4 x 60'	Material: Research proposal Bibliography: Paltridge, B. & Starfield, S. (2007). Thesis and dissertation writing in a second language: a handbook for supervisors. Routledge Material: Systematics of research proposals References: Murray, R. (2002). How to write a thesis. Open University Press Material: Contemporary issues in science education References: Akpan, B., Cavas, B., & Kennedy, T. (Eds.). (2023). Contemporary Issues in Science and Technology Education (Vol. 56). Springer Nature Switzerland Material: Presentation of data, tables, figures, quotations and references References References Schwartz, BM, Landrum, RE, & Gurung, RAR (2021). An easy guide to APA style (Fourth edition). SAGE Material: -	10%
			UAS assessment rubric Form of Assessment : Test	Evaluation/Final Semester Examination (UTS) 2 x 50'	-	Library:	

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	67.5%
2.	Project Results Assessment / Product Assessment	27.5%
3.	Test	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.
- The PLO imposed on courses are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
 Program Objectives (PO) are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
- 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.

Learning Methods: Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
 Learning materials are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.

The assessment weight is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
 TM=Face to face, PT=Structured assignments, BM=Independent study.