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Universitas Negeri Surabaya Faculty of Engineering , Electrical Engineering Education Undergraduate Study Program

Document Code

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Courses				CODE				Cours	se Fa	mily			Credit	t Weig	jht	SEN	MESTE	:R	Com	pilati	on
Research	n met	hodology		8320104	245								T=4	P=0	ECTS=6.36		6		Janu 2023	iary 2	,
AUTHOR	IZAT	ION		SP Deve	loper	r					Cou	urse (Cluste	r Coo	rdinator	Stu	dy Pro	gran	ı Coo	ordina	ıtor
				Dr. Joko,	, M.Pc	d. It.										D	r. Nur	Kholi:	s, S.T	⁻ ., М.Т	
Learning model	ı	Case Studies																			
Program Learning		PLO study prog	gram th	nat is ch	argeo	d to th	e cou	ırse													
Outcome (PLO)		PLO-5		o align the nds of glo							trainin	ig cur	riculun	in vo	cational ed	ucatio	n that i	s rele	evant	to the	!
		PLO-8	Have (extensive	know	/ledge i	in the f	fields of	gene	ral knov	vledge	e, soc	ial and	huma	ınities (Gen	eral).					
		Program Objec	tives (I	PO)																	
		PLO-PO Matrix																			
				P.O			LO-5		DI	.O-8											
PO Matrix at the end of each learning stage (Sub-PO)																					
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			P.	0								Wee	k								
				1	2	3	4	5	6	7	8	9	10	1	1 12	13	14	1	5	16	
											'				•						
Short Course Descript	tion	This course teach scientific truth usi from recognizing, hypotheses and collection-analysis	ng scie limiting designi	ntific pring g and forr ng verific	ciples mulati ation	s. Scier ing pro metho	ntific m blems, ods sta	nethodol s, studyir arting fr	logy to ng the om d	akes the eoretical etermini	e form I refer	of que rences opulat	uantita s-scien ion-sa	tive a tific fi	nd qualitativ ndings to e	e res xplain	earch a	appro oblem	ache ns. fo	s star rmula	ting tina
Reference	ces	Main :																			
		 Arikunto, Donald A Sugiyono 	ry, et al	l. 2011. P	engar	ntar Pe	nelitiar	n dalam	Pend	didikan.	Surab	aya :	Usaha	Nasi	onal . Alih b	ahasa	ı oleh d	oleh A	\rief F	urcha	มท
		Supporters:																			
		1. Tim, 201- 2. Tim, 202									•	•	rabaya	a, Univ	ersitas Neg	jeri Su	ırabaya	a			
Supporti lecturer	ing	Dr. Agus Budi Sa Prof. Dr. Ismet Ba Prof. Dr. Joko, M. Dr. Rina Harimurt Roswina Dianawa	asuki, M Pd., M. i, S.Pd.	I.Pd. T. , M.T.																	
Week-	eac				Eva	luation	ก				Stu	earnii Ident	Learn ng me Assig mated	thods nmen	ts,	n	earnin nateria eferen	ls		essm ight (
	(Sul	b-PO)	Ir	ndicator		C	riteria	& Form	n	Offline	e (off	line	On	line (online)]				

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Offline (offline

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Online (online)

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Form of Assessment : Participatory Activities, Portfolio Assessment Portfolio Assessment Material: Science and discussion results; and reflect. 1 page summary results uploaded to Google Drive Google Drive Surabaya: National Material: Science and discussion as well as how scientific truth through scientific	uploaded to through
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2	Students can analyze and carry out evaluations and identify problems, convey and formulate problems, identify variables, and identify populations	1.Analyze and evaluate and identify problems, convey and formulate problems, identify variables and populations 2.Participative	Criteria: 1.Accuracy of analysis results and summaries evaluating and identifying problems, conveying and formulating problems, identifying variables and populations, max score. 50 2.Participative, min score. 50 Form of Assessment: Participatory Activities, Portfolio Assessment	Lecturer's short presentation, discussion, question and answer; assignments to explore sources of information and group discussions to evaluate and identify problems, convey and formulate problems, identify variables and populations; summarize the results of group discussions, and reflect. The summary results uploaded individually are uploaded to Google Drive individually 2 X 50	Material: Research background, nature of the problem, source of the problem Reference: Arikunto, Suharsimi, 2006. Research Procedures A Practical Approach. Jakarta: Rineka Cipta. Material: Evaluate, identify, formulate and convey problems, variables, and populations; and formulating hypotheses Bibliography: Sugiyono, 2019. Quantitative and RD. Bandung: AlfaBeta Publishers Variables and populations References: sugiyono, 2019. Quantitative and RD. Bandung: AlfaBeta Publishers Qualitative Research Methods and RD. Bandung: AlfaBeta Publishers Quantitative and Convey problems, variables and populations References: Sugiyono, 2019. Quantitative AlfaBeta Publishers	4%

3	Literature & theory	Analyzing and	Criteria:	Short	Material:	4%
	review - Analyzing	summarizing	1.Accuracy of	presentations,	literature	470
	the meaning of theory literature,	literature & theory studies, compiling	summarizing	discussions,	review &	
	the role of theory	theories using	literature & theory	questions and	theory;	
	literature, and	deductive and	studies, compiling	answers and assignments to	analyzing the meaning of	
	reference sources; .assembling	inductive thinking	theories using	explore sources	theory-library	
	theories using deductive thinking		deductive and inductive thinking,	of information,	and the role of	
	deductive thinking and inductive		max score. 50	group	theory-library,	
	thinking		2.Participative, min	discussions to	reference	
	_		score 50	analyze theoretical	sources, how to construct	
				literature, the	theories,	
			Forms of Assessment	role of	deductive	
			: Participatory Activities,	theoretical	thinking, and	
			Portfolio Assessment,	libraries and reference	inductive thinking,	
			Practice / Performance	sources;	Library:	
				constructing	Donald Ary, et	
				theories using	al. 2011.	
				deductive and inductive	Introduction to Research in	
				thinking and	Education.	
				formulating	Surabaya:	
				hypotheses;	National	
				summarize the	Enterprise. Translated by	
				results; and reflect. The 2	Arief Furchan	
				page summary		
				results are	Material:	
				uploaded to	Literature &	
				Google Drive 2 X 50	theory review;	
					analyzing the meaning of	
					theoretical	
					libraries and	
					the role of	
					theoretical libraries,	
					reference	
					sources, how	
					to construct	
					theories, deductive	
					thinking, and	
					inductive	
					thinking,	
					formulating hypotheses	
					Reader:	
					Arikunto,	
					Suharsimi,	
					2018. Research	
					Procedures A	
					Practical	
					Approach. Jakarta:	
					Rineka Cipta	
					Material:	
					Literature &	
					theory review; analyzing the	
					meaning of	
					theoretical	
					libraries and	
					the role of theoretical	
					libraries,	
					reference	
					sources, how	
					to construct theories,	
					deductive	
					thinking, and	
					inductive	
					thinking. Library:	
					Arikunto,	
					Suharsimi,	
					2018.	
					Research	
					Procedures for a Practical	
					Approach.	
					Jakarta:	
					Rineka Cipta	
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4	Able to study the meaning and method of theoretical literature study, the role of theoretical literature, reference sources, constructing theories, deductive and inductive thinking	Analyzing the meaning and way of studying literature-theory studies, the role of literature-theory, reference sources, constructing theories, deductive and inductive thinking	Criteria: 1.Accuracy of analysis Analyzing the meaning and way of studying literature-theory studies, the role of literature-theory, reference sources, compiling theories, deductive and inductive thinking, max score. 50 2.Participative, min score 50 Forms of Assessment: Participatory Activities, Portfolio Assessment, Practice / Performance	Short presentations, discussions, questions and answers; assignments to search for sources of information and group discussions to analyze the meaning and methods of theoretical literature study, the role of theoretical literature, reference sources, constructing theories, deductive and inductive thinking; summarize the results; and reflection. The 2 page summary results are uploaded to Google Drive 2 X 50	Iterature review & theory; analyzing the meaning of theory-library and the role of theory-library; reference sources, how to construct theories, deductive thinking, and inductive thinking, Library: Donald Ary, et al. 2011. Introduction to Research in Education. Surabaya: National Enterprise. Translated by Arief Furchan Material: Literature & theory review; analyzing the meaning of theoretical libraries and the role of theoretical libraries, reference sources, how to construct theories, deductive thinking, and inductive thinking, and inductive thinking, Library: Arikunto, Suharsimi, 2018. Research Procedures for a Practical Approach. Jakarta: Rineka Cipta	
5	Analyze the meaning, characteristics, formulate and test research hypotheses	1.Analyze and conclude meaning, characteristics, formulate and test research hypotheses 2.Participation	Criteria: 1.Accuracy of results Analyze and conclude meaning, characteristics, formulate and test research hypotheses, max score 50 2.Participative, min score 50 Form of Assessment: Participatory Activities, Portfolio Assessment	Short presentations, discussions, questions and answers; assignments to explore sources of information and group discussions to analyze the meaning, characteristics, formulate and test research hypotheses and summarize the results; and reflection. 1 page summary results uploaded to Google Drive 2 X 50	Material: Definition and characteristics of a hypothesis, formulating a hypothesis and testing a hypothesis. Reference: Donald Ary, et al. 2011. Introduction to Research in Education. Surabaya: National Enterprise. Translated by Arief Furchan Material: Formulating hypotheses and how to test hypotheses Reference: Sugiyono, 2019. Quantitative and Qualitative Research Methods and RD. Bandung: AlfaBeta Publishers	

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6	Analyze the meaning, methods, characteristics, design and techniques of experimental research data analysis	1.Analyze the meaning, methods, characteristics, design and techniques of experimental research data analysis 2.Make a presentation 3.Participation	Criteria: 1.Accuracy of the results of analyzing and summarizing the meaning, methods, characteristics, design and techniques of analyzing experimental research data, max score 40 2.Presentation, max score 10 3.Participative, min score 50 Form of Assessment: Participatory Activities, Portfolio Assessment	Short presentations, discussions, questions and answers; assignments to search for sources of information and group discussions to analyze the meaning, methods, characteristics, design and data analysis techniques of experimental research and make class presentations, and summarize the results; do reflection. 1 page summary results uploaded to Google Drive 2 X 50	Material: Experimental research Reference: Sugiyono, 2019. Quantitative and Qualitative Research Methods and RD. Bandung: AlfaBeta Publishers	4%
7	Analyze the meaning, methods, characteristics, design and techniques of qualitative research data analysis	1.Analyze and summarize the meaning, characteristics, design and data analysis techniques of qualitative research 2.Conduct class presentations 3.Participation	Criteria: 1. Accuracy of analyzing and summarizing the meaning, methods, characteristics, design and techniques of qualitative research data analysis, max score 40 2. Presentation, max score. 10 3. Participative, min score. 50 Forms of Assessment: Participatory Activities, Portfolio Assessment, Practice / Performance	Short lecturer presentations, discussions and questions and answers; assignment to explore sources of information and group discussions to analyze the meaning, methods, characteristics, methods, design and techniques of qualitative research data analysis, make class presentations and summarize the results; reflection. The 2 page summary results are uploaded to Google Drive 2 X 50	Material: Qualitative research Reference: Sugiyono, 2019. Quantitative and Qualitative Research Methods and RD. Bandung: AlfaBeta Publishers Material: Qualitative research References: Donald Ary, et al. 2011. Introduction to Research in Education. Surabaya: National Enterprise. Translated by Arief Furchan	5%
8	UTS material for meetings 1 to 7		Form of Assessment : Practice/Performance, Test	2 X 50		20%

9	Analyze and	1 Anah 4	Criteria:	Short lecturer	Material:	4%
	compare the differences between experimental and ex post facto research, causal relationships, partial control, design, procedures, and the role of research	1.Analyze the meaning and compare the differences between experimental and ex post facto research including causal relationships, partial control, design, procedures and research roles 2.Class presentation 3.Participative	1.Accuracy of analyzing understanding and comparing experimental and ex post facto research including causal relationships, partial control, design, procedures and role of research, max score 40 2.Presentation, max score 10 3.Participative, min score 50 Forms of Assessment: Participatory Activities, Portfolio Assessment, Practice / Performance	presentations, discussions and questions and answers; assignments to explore sources of information and group discussions to analyze and compare differences between experimental and ex post facto research, causal relationships, partial control, design, procedures and research roles; class presentation and summarizing; reflection. The 2 page summary results are uploaded to Google Drive 2 X 50	Raterial: Comparison of experimental and ex post facto research Methods and RD. Bandung: AlfaBeta Publishers Material: Comparison of experimental and ex post facto research Reference: Arikunto, Suharsimi, 2018. Research Procedures A Practical Approach. Jakarta: Rineka Cipta	490
10	Analyze and conclude various measurement scales, research instruments, how to compose research instruments	1.Analyze various measurement scales, research instruments, how to compile research instruments and summarize the results 2.Class presentation 3.Participative	Criteria: 1. Accuracy of the results of analyzing and summarizing various measurement scales, research instruments, how to arrange research instruments and summarizing the results, max score 40 2. Class presentation, score 10 3. Participative, min score 50 Forms of Assessment: Participatory Activities, Portfolio Assessment, Practice / Performance	Lecturer's short presentation, discussion, question and answer; assignments to search for sources of information and group discussions to analyze various measurement scales, research instruments, how to compose research instruments; class presentation and summarizing the results; reflection. The 2 page summary results are uploaded to Google Drive 2 X 50	Material: measurement scale, research instruments, how to compose research instruments References: Arikunto, Suharsimi, 2018. Research Procedures A Practical Approach. Jakarta: Rineka Cipta Material: Measurement scales, research instruments, how to compose research instruments Reference: Sugiyono, 2019. Quantitative and Qualitative Research Methods and RD. Bandung: AlfaBeta Publishers	4%

11	Prepare the title and Chapter I of the research proposal	1.Prepare the title of the research proposal and Chapter I of the research proposal which contains the background, problem statement, objectives and benefits of the research 2.Participation	Criteria: 1.Accuracy of the title of the research proposal and Chapter I of the research proposal which contains the background, problem statement, objectives and benefits of the research, max score. 50 2.Participative, min score 50 Form of Assessment: Participatory Activities, Portfolio Assessment	Lecturer's short presentation, discussion, question and answer; The assignment for each student is to search for sources of information and identify actual problems relevant to the PTE Undergraduate Study Program to be resolved in a research proposal format (compiling the title and Chapter I), and to reflect. The titles and Chapter I compiled are uploaded to Google Drive as a portfolio and to be continued at the next meeting.	Material: Writing and evaluating proposals References: Team, 2014. Guidelines for writing undergraduate thesis programs (S- 1). Surabaya, Surabaya State University Material: Systematics of research proposals References: Arikunto, Suharsimi, 2018. Research Procedures, a Practical Approach. Jakarta: Rineka Cipta	8%
12	Able to prepare Chapter II of the Research Proposal, including literature review, relevant previous research and new research, framework of thinking, and formulation of hypotheses (if any)	1.Prepare Chapter II of the Research Proposal, including literature review, relevant previous research and new research, framework of thinking, and formulation of research hypotheses (if any) 2.Participative	Criteria: 1. Accuracy of the results of writing Chapter II of the Research Proposal, including literature review, relevant previous research and the novelty of the research, framework of thinking, as well as the formulation of research hypotheses (if any), max score. 50 2. Participative, min score 50% Form of Assessment: Participatory Activities, Portfolio Assessment	Lecturer's short presentation, discussion, question and answer; assignment to each student is to trace sources of information and prepare Chapter II as a continuation of Chapter I which has been prepared, and reflect. The progress of Chapter II that has been prepared is uploaded to Google Drive to be used as a portfolio and continued at the next meeting	Material: Literature Review References: Arikunto, Suharsimi, 2018. Research Procedures, a Practical Approach. Jakarta: Rineka Cipta Material: Preparation and assessment of proposals References: Team, 2014. Guidelines for writing undergraduate thesis programs (S-1). Surabaya, Surabaya State University	5%
13	Able to prepare Chapter II of the Research Proposal, including literature review, relevant previous research and new research, framework of thinking, and formulation of hypotheses (if any)	1.Prepare Chapter II of the Research Proposal, including literature review, relevant previous research and new research, framework of thinking, and formulation of research hypotheses (if any) 2.Participative	Criteria: 1. Accuracy of the results of writing Chapter II of the Research Proposal, including literature review, relevant previous research and the novelty of the research, framework of thinking, as well as the formulation of research hypotheses (if any), max score. 50 2. Participative, min score 50% Form of Assessment: Participatory Activities, Portfolio Assessment	Lecturer's short presentation, discussion, question and answer; assignment to each student to trace sources of information and continue compiling Chapter II; and reflect. Chapter II that has been prepared is uploaded to Google Drive to be used as a portfolio and continued at the next meeting (Chapter III)	Material: Literature Review References: Arikunto, Suharsimi, 2018. Research Procedures, a Practical Approach. Jakarta: Rineka Cipta Material: Preparation and assessment of proposals References: Team, 2014. Guidelines for writing undergraduate thesis programs (S- 1). Surabaya, Surabaya State University	5%

14	Able to prepare research methods (Chapter III) research proposals, including types, approaches and research designs; research steps; research steps; research population and sample; place and time of research; data collection technique; research instruments, data analysis techniques; reference; and research instrument attachments	1.Develop research methods, including types, approaches and research designs; research population and sample; place and time of research; data collection technique; research instruments; data analysis technique; reference; and research instrument attachments 2.Participative	Criteria: 1.Accuracy of research methods, including type, approach and research design; research steps; research population and sample; place and time of research; data collection technique; research instruments, data analysis techniques; reference; and research instrument attachment, max score. 50 2.Participative, min score 50%	Lecturer's short presentation, discussion, question and answer; assignment to each student to trace sources of information and prepare Chapter III as a continuation of Chapter III that has been prepared; and reflect. The progress of Chapter III that has been prepared is uploaded to Google Drive to be used as a portfolio and continued at the next meeting	Material: Research methods References: Sugiyono, 2019. Quantitative and Qualitative Research Methods and RD. Bandung: AlfaBeta Publishers Material: Research instruments References: Arikunto, Suharsimi, 2018. Research Procedures A Practical Approach. Jakarta: Rineka Cipta Material: Writing the method section and evaluating proposals References: Team, 2014. Guidelines for writing undergraduate thesis programs (S-1). Surabaya, Surabaya State University	4%
15	Able to prepare research methods (Chapter III) research proposals, including types, approaches and research designs; research steps; research steps; research population and sample; place and time of research; data collection technique; research instruments, data analysis techniques; reference; and research instrument attachments	1.Develop research methods, including types, approaches and research designs; research population and sample; place and time of research; data collection technique; research instruments; data analysis technique; reference; Research instrument attachment 2.Participative	Criteria: 1. Accuracy of research methods, including type, approach and research design; research steps; research population and sample; place and time of research; data collection technique; research instruments, data analysis techniques, references and research instrument attachments, max score. 50 2. Participative, min score 50% Form of Assessment: Participatory Activities, Portfolio Assessment	Lecturer's short presentation, discussion, question and answer; assignment to each student to trace sources of information and prepare Chapter III as a continuation of Chapter III that has been prepared; and reflect. Chapter III which has been completed is uploaded to Google Drive to be used as a portfolio	Material: Research methods References: Sugiyono, 2019. Quantitative and Qualitative Research Methods and RD. Bandung: AlfaBeta Publishers Material: Research instruments References: Arikunto, Suharsimi, 2018. Research Procedures A Practical Approach. Jakarta: Rineka Cipta Material: Writing the method section and evaluating proposals References: Team, 2014. Guidelines for writing undergraduate thesis programs (S-1). Surabaya, Surabaya State University	4%

16	UAS, presentation of proposals that have been prepared by students		: Participatory Activities,	Each student presents the results of their research proposal with a maximum time allocation of 10 minutes/student 6 X 50			30%
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Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	33.99%
2.	Portfolio Assessment	33.99%
3.	Practice / Performance	24.49%
4.	Test	17.5%
		100%

Notes

- 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.
- 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.