



**Universitas Negeri Surabaya**  
**Faculty of Mathematics and Natural Sciences**  
**Undergraduate Chemistry Education Study Program**

Document Code

**SEMESTER LEARNING PLAN**

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Research methodology	8420403192		T=3	P=0	ECTS=4.77	4	January 3, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Prof. Dr. Achmad Lutfi, M.Pd	Prof. Dr. Suyono. M.Pd.	Prof. Dr. Utiya Azizah, M.Pd.

**Learning model** Project Based Learning

Program Learning Outcomes (PLO)	PLO study program which is charged to the course																	
<b>PLO-5</b>	Able to make decisions based on data/information in order to complete tasks that are their responsibility and evaluate performance that has been carried out both individually and in groups, has an entrepreneurial spirit with an environmental perspective (CPL 7)																	
Program Objectives (PO)																		
<b>PO - 1</b>	Explain the basic concepts and characteristics of research, research design and its variables, and types of research and their characteristics, and be able to prepare research proposals from introduction to research methods.																	
PLO-PO Matrix																		
	P.O		P.O-5															
	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** A study of the nature, objectives and types of research methods that are relevant to research in the field of chemistry education and is able to equip students to be skilled in making decisions and applying research methods to find alternative solutions in solving problems in the field of education which includes research paradigms, frameworks of thinking, hypotheses and variables, population and samples, research instruments, research design, data collection techniques, and data analysis are packaged in a MIPA education research proposal as a course output.

References	<b>Main :</b>
	<ol style="list-style-type: none"> <li>Ary, Donald, et. Al. 1982.Pengantar Penelitian Pendidikan(terjemahan oleh Arief Furchan). Surabaya: Usaha Nasional</li> <li>Best, John W. 1982.Metodologi penelitianPendidikan (Terjemahan oleh Sanapiah Faisal &amp; Mulayadi G. Waseso)Surabaya:Usaha Nasional</li> <li>Faisal,Sanapiah. 1982.Metodologi Penelitian Pendidikan. Surabaya:Penerbit Usaha Nasional.</li> <li>Ferguson,George A. 1981.Statistical Analysis in Psychology and Education. London: McGraw-Hill International Book Company.</li> <li>Shumway, Richard J (Ed. ). 1980.Researchin Mathematics education. Reston,Virginia: The National Council of Teachersof Mathematics, Inc.</li> <li>Merriam, Sharan B, 1998.Qualitatif Research and Case StudyApplication in Education. San Fransisco: Jossey Bass Publisher</li> <li>Moleong, Lexy J. 2004.MetodologiPenelitian Kualitatif. Bandung: Remaja Rosdakarya</li> <li>Muhadjir, Noeng. 2000.MetodologiPenelitian Kualitatif. Edisi IV. Yogyakarta : Rake Sarasin</li> <li>Brannen, Julia. 1996.Memadu MetodePenelitian Kualitatif &amp; Kualitatif(Terjemahan oleh Kurde, N. A, dkk)Yogyakarta: Pustaka Pelajar</li> <li>Suharsini Arikunto. 1990.Manajemen Penelitian. Jakarta:Penerbit: PT Rineka Cipta.</li> <li>TimPelatih Proyek PGSM. 1999.Penelitian Tindakan Kelas. Jakarta: Proyek PGSM. Ditjen Dikti. Depdikbud RI</li> <li>TimUnesa. 2000.Buku Penulisan Skripsi. Surabaya: Universitas NegeriSurabaya</li> <li>Sumber lain yang relevan</li> </ol>
	<b>Supporters:</b>

**Supporting lecturer** Prof. Dr. Achmad Lutfi, M.Pd.  
 Dr. Muchlis, S.Pd., M.Pd.

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [ Estimated time ]		Learning materials [ References ]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline ( offline )	Online ( online )		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	Explain the basic concepts and characteristics of research	Explain the basic concepts and characteristics of research	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative test, carried out twice assessing all relevant indicators through written examinations, averaged and weighted (2)</li> <li>4.3. Assignment assessment, scores are averaged, then weighted (3)</li> <li>5.4. Summative tests are averaged as UAS scores, given a weight of (3)</li> <li>6.5. The final NA is (participation value x2) (assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Basic concepts and research characteristics  <b>Reader:</b> <i>Faisal, Sanapiah. 1982. Educational Research Methodology. Surabaya: National Business Publishers.</i></p>	5%
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2	Identifying the design of a research and its variables	1. Identify the research design and variables 2. Identify the problem 3. Formulate the problem	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects: <ol style="list-style-type: none"> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided</li> </ol> </li> </ol> <p><b>Form of Assessment</b> : Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Research design and variables  <b>Reference:</b> Suharsini Arikunto. 1990. <i>Research Management</i>. Jakarta: Publisher: PT Rineka Cipta.</p>	5%
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3	Describe the types of research and their characteristics	1. Describe experimental research (quantitative) 2. Describe qualitative research 3. Describe classroom action research 4. Describe development research	<p><b>Criteria:</b></p> <p>1. The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures, carried out through observation (weight 2)</p> <p>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</p> <p>4.3. Structured task assessments are averaged, then given a weight (3)</p> <p>5.4. Collected papers are assessed with a weight of 3</p> <p>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</p> <p>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</p> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> types of research and their characteristics/characteristics</p> <p><b>Reader:</b> <i>Suharsini Arikunto. 1990. Research Management. Jakarta: Publisher: PT Rineka Cipta.</i></p>	5%
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4	Describe the types of research and their characteristics	1. Describe experimental (quantitative) research and its procedures 2. Describe qualitative research and its procedures	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:             <ol style="list-style-type: none"> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> </li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Describe experimental (quantitative) research and its procedures 2. Describe qualitative research and its procedures <b>References:</b> <i>Faisal, Sanapiah. 1982. Educational Research Methodology. Surabaya: National Business Publishers.</i></p>	5%
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5	Describe the types of research and their characteristics	Describe classroom action research and its procedures	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Describes classroom action research and its procedures. <b>Reference:</b> <i>Faisal, Sanapiah. 1982. Educational Research Methodology. Surabaya: National Business Publishers.</i></p>	10%
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6	Choose a research approach and design according to the problem being solved	Planning Experimental Research (quantitative) and procedures	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Planning Experimental Research (quantitative) and procedures <b>Reference:</b> Suharsini Arikunto. 1990. <i>Research Management</i>. Jakarta: Publisher: PT Rineka Cipta.</p>	10%
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7	Choose a research approach and design according to the problem being solved	Planning PTK research and procedures	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:             <ol style="list-style-type: none"> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> </li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Planning CAR Research and procedures  <b>References:</b> PGSM Project Training Team. 1999. <i>Class Action Research</i>. Jakarta: PGSM Project. Directorate General of Higher Education. Indonesian Ministry of Education and Culture</p>	5%
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8	UTS	<p>1. Explain the basic concepts of research. 2. Identify the problem and problem formulation 3. Describe and plan experimental (quantitative) research and its procedures 4. Describe and plan qualitative research and its procedures 5. Describe Classroom Action Research and its procedures</p>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects: <ol style="list-style-type: none"> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> </ol> </li> <li>7. The final NA is (participation value x2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	<p>Test description 3 X 50</p>		<p><b>Material:</b> Introduction to research to classroom action research <b>Reader:</b> Suharsini Arikunto. 1990. <i>Research Management</i>. Jakarta: Publisher: PT Rineka Cipta.</p>	5%
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9	Choose a research approach and design according to the problem being solved	Describe development research and its procedures	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Research development and procedures  <b>References:</b> <i>Faisal, Sanapiah. 1982. Educational Research Methodology. Surabaya: National Business Publishers.</i></p>	10%
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10	Develop a research conceptual framework and research proposal systematics	1. Describe the conceptual framework design and its implementation	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Expository, discussion 3 X 50		<p><b>Material:</b> Describe the design of the conceptual framework and its implementation</p> <p><b>Reference:</b></p>	5%
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11	Drafting an introductory chapter (background, problem statement, objectives, benefits, assumptions, limitations, operational definition)	1. Describe the introductory chapter and its manifestation	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Describe the introductory chapter and its embodiment. <b>Reference:</b> <i>Suharsini Arikunto. 1990. Research Management. Jakarta: Publisher: PT Rineka Cipta.</i></p> <hr/> <p><b>Material:</b> Describe the introductory chapter and its embodiment. <b>Reference:</b> <i>Suharsini Arikunto. 1990. Research Management. Jakarta: Publisher: PT Rineka Cipta.</i></p>	5%
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12	Develop a theoretical framework (literature review chapter) that supports the problem	1. Describe the theoretical framework/literature review related to the research problem and its manifestation	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Describe the theoretical framework/literature study related to the research problem and its manifestation.</p> <p><b>Reference:</b> <i>Ferguson, George A. 1981. Statistical Analysis in Psychology and Education. London: McGraw-Hill International Book Company.</i></p>	5%
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13	Develop a design (research design), research procedures and create a relationship matrix between research data and data analysis	1. Describe the research design and procedures including tools, research instruments, collection methods and data analysis techniques related to the research problem and its manifestation	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects: <ol style="list-style-type: none"> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> </li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Describes research design and procedures including tools, research instruments, collection methods and data analysis techniques related to the research problem and its realization.</p> <p><b>References:</b> <i>Faisal, Sanapiah. 1982. Educational Research Methodology. Surabaya: National Business Publishers.</i></p>	10%
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14	Compile a list of references used to conduct research	Describe references that are appropriate to the problem being researched and its manifestation	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x 2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Expository questions and answers, discussions, assignments, presentations 3 X 50		<p><b>Material:</b> Describe references that are appropriate to the problem being studied and its manifestation.</p> <p><b>References:</b> Ary, Donald, et. Al. 1982. <i>Introduction to Educational Research</i> (translation by Arief Furchan). Surabaya: National Enterprise 2. Best, John W. 1982. <i>Research methodology Education</i> (Translation by Sanapiah Faisal &amp; Mulyadi G. Waseso) Surabaya: National Enterprise</p>	5%
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15	Preparing draft proposals and mentoring/mentoring	Describe the draft proposal in accordance with the results of reviewing thesis journals from various sources and its embodiment	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. The assessment is carried out on the following aspects:</li> <li>2.1. Participation during lectures, carried out through observation (weight 2)</li> <li>3.2. Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>4.3. Structured task assessments are averaged, then given a weight (3)</li> <li>5.4. Collected papers are assessed with a weight of 3</li> <li>6.5. The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>7. The final NA is (participation value x2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Group assignment 3 X 50		<p><b>Material:</b> Describe the draft proposal according to the results of reviewing the thesis journal from various sources and its implementation.</p> <p><b>References:</b> <i>Faisal, Sanapiah. 1982. Educational Research Methodology. Surabaya: National Business Publishers.</i></p>	5%
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16	Take the Summative exam	Communicate and account for research designs that will be carried out related to current educational problems	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>The assessment is carried out on the following aspects: <ol style="list-style-type: none"> <li>Participation during lectures, carried out through observation (weight 2)</li> <li>Sub-summative tests or mid-semester exams (UTS) are carried out to assess indicators 1-8 via written exams, and are given weighting (2)</li> <li>Structured task assessments are averaged, then given a weight (3)</li> <li>Collected papers are assessed with a weight of 3</li> <li>The final semester exam (UAS) is used to measure the achievement of indicators 9-16, through a research proposal paper presentation exam, and the results are given a weight of 3</li> <li>The final NA is (participation value x2) (Assignment value x 3) (UTS value x 2) UAS value (3) divided by 10</li> </ol> </li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Presentation of 3 X 50 group papers		<p><b>Material:</b> Introduction to research to preparation of research proposals  <b>Reader:</b> <i>Suharsini Arikunto. 1990. Research Management. Jakarta: Publisher: PT Rineka Cipta.</i></p>	5%
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#### Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	72.5%
2.	Project Results Assessment / Product Assessment	27.5%
		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.
- 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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.

