SILLABUS
COURSE: RESEARCH METHOD OF MATHEMATICS EDUCATION(3 CREDITS)
CODE: MT 304

BY : ADE ROHAYATI

DEPARTEMENT OF MATHEMATICS EDUCATION
FACULTY OF MATHEMATICS EDUCATION AND SCIENCE
INDONESIA UNIVERSITY OF EDUCATION
2008

COURSE: RESEARCH METHOD OF MATHEMATICS EDUCATION (3 CREDITS)
CODE: MT 503

Description: The purpose of this course is to improve students' ability in understanding and doing research about mathematics learning problems at school. The materials included in this course are research in developing knowledge, how to design a quantitative research or qualitative research, literature study, various ways of collecting data, data analysis, and how to make research result raport appropriate with rule used.

Prerequisite: The students have followed Basic Statistics dan Evaluation of Mathematics Learning

Resources: 1. Ruseffendi, E. T. (1998). *Dasar-dasar Penelitian Pendidikan dan Bidang Ilmu Non Eksakta Lainnya*. Semarang: IKIP Semarang Press.

2. R. B. Walter dan D. G. Merdith (1989). *Educational Research.* Melbourne: Longman Cheshire Pty.

3. Madya, S. (1994). *Panduan Penelitian Tindakan*. Yogyakarta: Lembaga Penelitian IKIP Yogyakarta.

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WEEK	TOPIK ANDSUB TOPIK	GOAL	OBJECTIVE	MATERIAL	METHOD & APPROACH	INSTRU MENT	TEST	RESOURCES
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Research and Scientific Method.	The students can understand about research and scientific method	The purpose of this course are the students be able to: 1. 1 mention the meaning of research. 1. 2 order the six ways to find out the truth from the littest to the biggest error if the result of finding the truth applied. 2. 1 give the reason why the research is important.	1. The meaning of research. 2. The importance of research	Expository, question-answer method, and discuss.	OHP or LCD, computer, and white board.		1. E. T. Ruseffendi. (1998). *Dasar-dasar Penelitian Pendidikan dan Bidang Ilmu Non Eksakta Lainnya*. Semarang: IKIP Semarang Press. 2. R. B. Walter dan D. G. Merdith (1989). *Educational Research*. Melbourne:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
								Longman CheshirePty.
2	The body of research.	The students can understand about the body of research.	3. 1 to mention the body of research and explain the meaning of every part of it. 3. 2 to mention the characteristics of a good problem. 3.3 to mention several resources of problem. 3. 4 to formulate a problem and make the back groun of it.	3. Problem of reseacrh	Expository, question-answer method, and discuss.	OHP or LCD, computer, and white board.	Individual task: - to make a formulation of research problem and it's back ground. - to hold study of literature appropriate with the problem has been - to read research result like scholarly paper, thesis, or desertasi, and others.	Same as above.
3			4. 1 to tell the importance of study of literature. 4. 2 to mention six resources for studying of literature and order it from the best.	4. Study of Literature	Expository, question-answer method, and discuss.	OHP or LCD, computer, and black board.		Same as above.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4			5. 1 to formulate a research hypothesis. 5. 2 to formulate a statistics hypothesis.	5. Hypothesis	Expository, question-answer method, and discuss.		to formulate hypothesis for problem which have been making by students after they held study of literature.	Same as above.
			6. 1 to give reason about the importance of data and it 's analysis for a research	6. Collecting and analysis of data	Question-answer method, and discuss.			Same as above.
			7. 1 to give reason why do we use "to test hypothesis" not "to prove hypothesis" for seeing the truth.	7. Hypothesis Test				
5			8. 1 to differenciate between product, conclusion, implication, and recommendation from a research.	8. Conclusion and recomendation.	Question-answer method, and discuss			Same as above.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Research Clasification	The students can understand about research clasification.	9. 1 mengklasifikasikan penelitian berdasarkan maksudnya dan menjelaskan jenisnya masing-masing. 9. 2 to classify research based on it's method and to explain of each various research.	9. Klasifikasi Penelitian menurut Maksud dan metode.	Ekspositori, Tanya jawab, dan diskusi.	OHP dan papan tulis.		Same as above.
6	Experiment	The students more understand about experiment research.	10. 1 to mention characteristic of experiment. 10. 2 to explain terminology in experiment research correctly. 10. 3 to mention the meaning of extraneous variable on experiment research. eksperimen.	10. Characteristic of Experiment research	Expository, question-answer method, and discuss.	OHP and black board.		Same as above.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7			10. 4 to mention the ways to handle extraneous variable on experiment research. 11. 1 to choose design of experiment which appropriate with problem will be researched. 11. 2 to explain the internal validity on experiment research. 11. 3 to explain the external validity on experiment research. 11. 4 to explain factors can damage internal validity.	11. Design of experiment	Expository, question-answer method, and discuss.	OHP and black board.		Same as above.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8	MID TERM TEST							
9	Data Collecting	to understand the purpose and the ways of data collecting.	12.1 to know the purpose of data collecting. 12. 2 to mention the meaning of sample. 12. 3 to mention the meaning of population. 12. 4 to differenciate between limited population and unlimited population. 12. 5 to give example of limited population. 12. 6 to give example of unlimited population. 12. 6 to mention the advantages/ reminder and weaknesses of census. 12. 7 to mention the advantages/	12. Population and Sample	Question-answer method, and discuss.			Same as above.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			reminder and weaknesses of sampling.					
			12. 8 to use technique of collecting data exactly. 12. 9 to mention strength and weaknesses of certain sampling technique. 12. 10 to choose sample randomly using numbering. 12. 11 to choose sample sampel randomly using random number table. 12. 12 to choose sample randomly using calculator.		Expository, question-answer method, and discuss.			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			12. 13 to choose sample randomly using computer programing program. 13. 1 to determine size of minimum sample for descriptive research 13. 2 to determine size of minimum sample using formula.	13. Size of sample.				
10	Instrumentation	To understand various of research instrument and be able to use them exactly.	14. 1 to mention use of instrument. 14. 2 to compose test instrument.	14. Data collecting using test and non-test instruments.	Expository, question-answer method, and discuss.			Same as above.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11			14. 3 to know weaknesses of objective test and can handle them. 14. 4 to explain the weaknesses of non-test instrument. 14. 5 to mention various of attitude scale. 14. 6 to make non-tes instrument. 15. 1 to choose variety of instrument exactly which appopiate with need. 15. 2 to explain the importance of valid and reliable instrument. 15. 3 to explain various of validties.	15. Choosing of instrument.	Expository, question-answer method, and discuss. .			Same as before.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			15. 4 to mention factors influence validity of evaluation tool. 15. 5 to calculate coefficient of a test reliability. 16. 1 to explain the purpose of experiment of instrument. 16. 2 to analyze menganalisis the result of experimen of instrument.	16. Experiment of instrument		Calcu lator		
12	Research proposal and writing result of the research.	to understand the ways of making research proposal and writing of research result report using the rule of scientific work	17. 1 to explain the meaning of research proposal. 17. 2 to explain the purpose of making research design.	17. Research Design	Expository, question-answer method, and discuss.		Individual task: to make a research proposal of mathematics education collected before final test.	Same as before

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13			17. 3 to mention components of research proposal. 17. 4 to explain the content of each component of research proposal. 17. 5 to make research proposal promoted for scholar paper research. 18. 1 to mention components of research result report, namely scholar paper. 18. 2 to explain the content of each component of research report.	18. Writing of result report.	Expository, question-answer method, and discuss.	OHP and black board.		Same as before.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14	Classroom Action Research	The students understand about classroom action research	18. 3 to know technique of tapewriting of research report. 18. 4 to use completed spelling (EYD) in writing research report. 18. 5 to write quotation correctly. 18. 6 to write refference correctly. 19. 1 to explain the meaning of classroom action research. 20. 1 to mention use of classroom action research.	19. Meaning of classroom action research. 20. The importance of classroom action research	Expository, question-answer method, and discuss.	Computer and infocus.		1. Wardani, I.G.K, Wihardit, K, dan Nasoetion, N. *Penelitian Tindakan Kelas*. Jakarta: Universitas Terbuka. 2. Arikunto, S. , Suhardjono, dan Supardi.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	*Penelitian Tindakan Kelas*. Jakarta: PT. Bumi Aksara.
								(9)
15			21. 1 to explain the differences of assumption become basic of experiment and classroom action research model. . 22. 1 to explain the main	21. Comparation of assumpsion become basic of experimen and classroom action research model. 22. Characteris tics of	Expository, question-answer method, and discuss.	Compu ter and infocus		Same as before.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			characteristics of classroom action research. 22. 2 to explain the differences between qualitative research (experiment) and classroom action research.. 22. 3 to mention the advantages and disadvantages of classroom action research.. .	classroom action research.				
			22. 4. To give several examples of researchable problem can be solved using classroom action				

			research. classroom action research.					
16	FINAL TEST							

Approved by:

Bandung, February 2009

Dean assistant 1

Head of Mathematics Education Program

Lecturer

Dra. Hj. Ade Rohayati, M. Pd.

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NIP.　　　　　　　　　　　　　　　　**NIP.**　　　　　　　　　　　　　**NIP. 19600501 198503 2 002**