

SEMESTER LEARNING PLAN

**MATHEMATICS OF ECONOMICS AND FINANCE COURSES
(23H01121903)**



TEACHING TEAM

Prof. Dr. Jeffry Kusuma
196411121987031002

Mauliddin, S.Si., M.Si
198308052015031005

STUDI PROGRAM OF MATHEMATICS - S1
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
HASANUDDIN UNIVERSITY
MAKASSAR
2025

**STUDY PROGRAM OF MATEMATIKA - S1
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
HASANUDDIN UNIVERSITY**

Vision

The scientific vision is to become a study program with an international reputation in the development of mathematics based on the Indonesian maritime continent by 2030

Vision Strategy

Mission

To fulfill the above vision, the Undergraduate Mathematics Study Program has four missions, namely:

- Organizing innovative and effective mathematics learning to improve the quality and creativity of students in order to compete nationally and internationally.
- Improving a research culture that produces internationally reputable publications.
- Playing an active role in community service activities and collaborating with other academic institutions, government, business, media and society.
- Carry out governance in the Mathematics Study Program that is effective, efficient and transparent based on IT and ISO 9001:2015 standards to achieve the tridharma goals.

Graduate Profiles

Gagal diterjemahkan

PLO charged to courses

CPL-1 (ILO 1) - Students are able to demonstrate an advanced understanding of basic pure and simple applied mathematics.

CPL-2 (P2) - The students are able to identify objects, techniques, and theorems in fundamental mathematics, and making a connection for solving problems

CPL-4 (KU2) - The students are able to use their sufficiently mathematical critical thinking for abstraction and generalization of a mathematical problem

CPL-5 (KK1) - The students are able to construct mathematical modelling with relatively new ideas and present the results orally and in writing

CPL-7 (KK3) - The students are able to demonstrate mathematical skills which include interpretation, connecting problems, solving problems, and communicating individually or teamwork

Course Learning Outcomes (CLO)

CPMK-1: Students can understand interest rates, present value analysis, probability theory, probability of normal random variables and their properties (CPL1)

CPMK-2: Students can identify techniques and theorems in interest rates, present value, Brownian motion, and make relationships to derive the Black-Sholes formula (CPL2 dan CPL4)

CPMK-3: Students can use the Black-Scholes concept effectively to solve option pricing problems in economics. (CPL2, CPL5 dan CPL7)

Sub-CLO

Sub CPMK-1: Able to understand the concepts of probability, events/events, conditional probability, random variables, expectations, covariance and correlation, and conditional expectations (CPMK-1)

Sub CPMK-2: Able to identify continuous type random variables, normal random variables, properties of normal random variables, central limit theorem (CPMK-1)

- Sub CPMK-3: Able to understand the definition and properties of Brownian Motion. Able to understand the concept of Brownian Motion as a collection of processes at time intervals resulting from partitions. Able to identify the properties of Maximum Brownian Motion. Able to understand the Cameron-Martin Theorem as Brownian Motion with a zero drift parameter. (CPMK-2)
- Sub CPMK-4: Able to calculate several types of interest rates. Able to make Present Value Analysis of an investment. Able to make Rate of Return Analysis of an investment. Able to calculate continuous variation interest rate. (CPMK-1 dan CPMK-2)
- Sub CPMK-5: Able to explain the meaning of arbitrage. Able to set option prices. Able to set option prices through an arbitrage scheme. (CPMK-1)
- Sub CPMK-6: Able to prove the Arbitration Theorem. Able to describe the Binomial Model approach as a multi-period option scenario. (CPMK-2 dan CPMK-3)
- Sub CPMK-7: Able to understand the Black-Scholes formulation. Able to identify the characteristics of option costs using the Black-Scholes formula. Able to outline delta Hedging arbitrage strategies. Able to decipher several derivatives. The option purchase price with the initial price follows the Black-Scholes process. Be able to describe the properties of monotonicity and convexity of European put options. (CPMK-2 dan CPMK-3)

Learning Analytics

Economic and Financial Mathematics



Able to understand the Black-Scholes formulation. Able to identify the characteristics of option costs using the Black-Scholes formula. Able to outline delta Hedging arbitrage strategies. Able to decipher several derivatives. The option purchase price with the initial price follows the Black-Scholes process. Be able to describe the properties of monotonicity and convexity of European put options. (CPMK-2 dan CPMK-3)



Able to prove the Arbitration Theorem. Able to describe the Binomial Model approach as a multi-period option scenario. (CPMK-2 dan CPMK-3)



Able to explain the meaning of arbitration. Able to set option prices. Able to set option prices through an arbitrage scheme. (CPMK-1)



Able to calculate several types of interest rates. Able to make Present Value Analysis of an investment. Able to make Rate of Return Analysis of an investment. Able to calculate continuous variation interest rate. (CPMK-1 dan CPMK-2)



Able to understand the definition and properties of Brownian Motion. Able to understand the concept of Brownian Motion as a collection of processes at time intervals resulting from partitions. Able to identify the properties of Maximum Brownian Motion. Able to understand the Cameron-Martin Theorem as Brownian Motion with a zero drift parameter. (CPMK-2)



Able to identify continuous type random variables, normal random variables, properties of normal random variables, central limit theorem (CPMK-1)



Able to understand the concepts of probability, events/events, conditional probability, random variables, expectations, covariance and correlation, and conditional expectations (CPMK-1)

.....



HASANUDDIN UNIVERSITY

FAKULTY OF MATHEMATICS AND NATURAL SCIENCES

STUDY PROGRAM OF MATHEMATICS - S1

SEMESTER LEARNING PLAN

Course		Code	Course Group	Credits	SEMESTER	Compilation Date
Economic and Financial Mathematics		23H01121903	Expertise Courses	3	4	10 Agustus 2024
AUTHORITY		SLP Developer Lecturer		Coordinator		Head of Study Program
		Prof. Dr. Jeffry Kusuma		Prof. Dr. Jeffry Kusuma		Dr. Firman, S.Si.,M.Si.
Learning Outcomes Course	SLOs that are imposed on the course					
	SLO-1:	Mahasiwa memiliki pemahaman yang relatif mendalam dalam matematika murni dan matematika terapan sederhana.				
	SLO-2:	Mahasiswa mampu mengidentifikasi objek, teknik, dan sifat dalam matematika dasar, dan membuat koneksi untuk menyelesaikan masalah				
	SLO-4:	Mahasiswa dapat menggunakan pemikiran kritis matematis mereka yang cukup untuk abstraksi dan generalisasi masalah matematika berdasarkan hasil analisis informasi dan data				
	SLO-5:	Mahasiswa dapat membangun pemodelan matematika dengan ideide yang relatif baru dan mempresentasikan hasil dengan jelas secara lisan dan tertulis				
	SLO-7:	Mahasiswa dapat menunjukkan keterampilan matematika termasuk menghubungkan masalah, menyelesaikan masalah, interpretasi, dan berkomunikasi secara individu atau dengan kerja tim				
	SLO ⇒ Course Learning Outcomes					
	After completing this course, it is expected:					
	SLO-1	CLO-1: Students can understand interest rates, present value analysis, probability theory, probability of normal random variables and their properties				
	SLO-2	CLO-2: Students can identify techniques and theorems in interest rates, present value, Brownian motion, and make relationships to derive the Black-Sholes formula				
		CLO-3: Students can use the Black-Scholes concept effectively to solve option pricing problems in economics.				
	SLO-4	CLO-2: Students can identify techniques and theorems in interest rates, present value, Brownian motion, and make relationships to derive the Black-Sholes formula				
	SLO-5	CLO-3: Students can use the Black-Scholes concept effectively to solve option pricing problems in economics.				
	SLO-7	CLO-3: Students can use the Black-Scholes concept effectively to solve option pricing problems in economics.				
	CLO ⇒ Sub-CLO					
		Sub-CLO-1:Able to understand the concepts of probability, events/events, conditional probability, random variables, expectations, covariance and correlation, and conditional expectations				

	CLO-1	Sub-CLO-2:Able to identify continuous type random variables, normal random variables, properties of normal random variables, central limit theorem
		Sub-CLO-4:Able to calculate several types of interest rates.Able to make Present Value Analysis of an investment.Able to make Rate of Return Analysis of an investment.Able to calculate continuous variation interest rate.
		Sub-CLO-5:Able to explain the meaning of arbitration.Able to set option prices.Able to set option prices through an arbitrage scheme.
	CLO-2	Sub-CLO-3:Able to understand the definition and properties of Brownian Motion.Able to understand the concept of Brownian Motion as a collection of processes at time intervals resulting from partitions.Able to identify the properties of Maximum Brownian Motion.Able to understand the Cameron-Martin Theorem as Brownian Motion with a zero drift parameter.
		Sub-CLO-4:Able to calculate several types of interest rates.Able to make Present Value Analysis of an investment.Able to make Rate of Return Analysis of an investment.Able to calculate continuous variation interest rate.
		Sub-CLO-6:Able to prove the Arbitration Theorem.Able to describe the Binomial Model approach as a multi-period option scenario.
		Sub-CLO-7:Able to understand the Black-Scholes formulation.Able to identify the characteristics of option costs using the Black-Scholes formula.Able to outline delta Hedging arbitrage strategies.Able to decipher several derivatives. The option purchase price with the initial price follows the Black-Scholes process.Be able to describe the properties of monotonicity and convexity of European put options.
	CLO-3	Sub-CLO-6:Able to prove the Arbitration Theorem.Able to describe the Binomial Model approach as a multi-period option scenario.
		Sub-CLO-7:Able to understand the Black-Scholes formulation.Able to identify the characteristics of option costs using the Black-Scholes formula.Able to outline delta Hedging arbitrage strategies.Able to decipher several derivatives. The option purchase price with the initial price follows the Black-Scholes process.Be able to describe the properties of monotonicity and convexity of European put options.
	Correlation between SLOs/CLOs to Sub-CLOs	

SLOs that are charged on the Course	CPMK	SUB CPMK	Form of Assessment*						Weight	Value	Student Score
			Formative	Sumative							
				Independent Assignment	Case Studies	Group task	Written Exam	Written Exam			
SLO-1	CLO-1	SUB-CLO-1	discipline, perseverance, activeness and discipline, perseverance, activeness	5	10	0	0	0	15		
SLO-1	CLO-1	SUB-CLO-2	discipline, perseverance, activeness	10	0	0	4	0	14		
SLO-4	CLO-2	SUB-CLO-4	discipline, perseverance, activeness	0	15	0	6	0	21		
SLO-1	CLO-1	SUB-CLO-5	discipline, perseverance, activeness	0	0	15	0	3.75	18.75		
SLO-7	CLO-3	SUB-CLO-6	discipline, perseverance, activeness	0	10	0	0	2.5	12.5		

SLOs that are charged on the Course	CPMK	SUB CPMK	Form of Assessment*						Weight	Value	Student Score
			Formative	Sumative							
				Independent Assignment	Case Studies	Group task	Written Exam	Written Exam			
SLO-7	CLO-3	SUB-CLO-7		0	15	0	0	3.75	18.75		
				15	50	15	10	10	100		
Course Description		This course describes the Black-Scholes Formula in determining option prices based on the Brownian Motion approach. This description requires sufficient knowledge of probability theory, especially the probability of normally distributed random variables and their properties. The Black-Scholes formulation is also built on the concept of interest rate, present value, arbitrage concept to determine option prices in single or multi periods.									
Learning Materials/Subjects		1. Probability Theory (Probability Theory) 2. Normal random variables (Normal random variables) 3. Brownian Motion and Geometric Brownian Motion (Brownian Motion and Geometry Brownian Motion) 4. Interest Rate and Present Value Analysis (interest rate and present value analysis) 5. Arbitration Theorem 6. Black-Scholes Formula									
Reference		Main References									
		An Elementary Introduction to Mathematical Finance (Third Edition). Cambridge University Press, Sheldon M. Ross. 2011.									
		Additional References									
		Reading sources on the Internet									
Teaching Team		Prof. Dr. Jeffry Kusuma, Mauliddin, S.Si., M.Si									
Course requirement											
Week	Sub CPMK (End-of-stage learning ability)		Penilaian (Assesment)		Learning Forms and Methods [time estimate]		Content		Weight of Assessment (%)		
			Indicator	Techniques & Criteria	Offline	Online					
1	2		3	4	5	6	7		8		

1	Able to understand the concepts of probability, events/events, conditional probability, random variables, expectations, covariance and correlation, and conditional expectations (CPMK-1)	Formative: accuracy of understanding Sumative: Precision explains the concepts of probability, events/events, conditional probability, random variables, expectations, covariance and correlation, and conditional expectations.	Formative Criteria: discipline, perseverance, activeness dinilai dengan rubrik 04 Sumative Criteria: Independent Assignment (5) Assessment Technique: Gagal diterjemahkan	Studying: Collaborative learning (Collaborative Learning), other methods 1X3X50		College Contract Probability probability, event/occurrence, conditional probability, random variable, expectation, covariance and correlation, and conditional expectation.	5
2	Able to identify continuous type random variables, normal random variables, properties of normal random variables, central limit theorem (CPMK-1)	Formative: accuracy of understanding Sumative: The accuracy of defining continuous random variables, normal random variables, properties of normal random variables, central limit theorem	Formative Criteria: discipline, perseverance, activeness dinilai dengan rubrik 01 Sumative Criteria: Independent Assignment (10) dinilai dengan rubrik 01 Assessment Technique: Gagal diterjemahkan			Normal Random Variables continuous random variables, normal random variables, properties of normal random variables, central limit theorem.	10

3-4	Able to understand the concepts of probability, events/events, conditional probability, random variables, expectations, covariance and correlation, and conditional expectations (CPMK-1)	Formative: accuracy of understanding Sumative: Accuracy in defining and describing the properties of Brownian Motion. Accuracy in understanding the process of Brownian Motion as a collection of processes in the time interval resulting from partitions. Accuracy in identifying the properties of Maximum Brownian Motion. Accuracy in understanding the Cameron-Martin Theorem as Brownian Motion with the assumption that the drift parameter has a value zero.	Formative Criteria: discipline, perseverance, activeness dinilai dengan rubrik 01 Sumative Criteria: Case Studies (10) dinilai dengan rubrik 01 Assessment Technique: Gagal diterjemahkan			Brownian Motion Brownian Motion, Brownian Motion in the partitioned time interval, Maximum Brownian Motion, Cameron-Martin Theorem	10
-----	---	--	--	--	--	--	----

5-7	Able to calculate several types of interest rates. Able to make Present Value Analysis of an investment. Able to make Rate of Return Analysis of an investment. Able to calculate continuous variation interest rate. (CPMK-1, CPMK-2)	Formative: accuracy of understanding Sumative: Precision in calculating several types of interest rates. Accuracy in obtaining Present Value analysis results on an investment. Precision in making Rate of Return analysis of an investment program. Accuracy in calculating interest rates with continuous variation.	Formative Criteria: discipline, perseverance, activeness dinilai dengan rubrik 04 Sumative Criteria: Case Studies (15) dinilai dengan rubrik 01 Assessment Technique: Gagal diterjemahkan			Interest rate and present value analysis Types of interest rates, present value analysis, rate of return analysis, continuous variation interest rate.	15
8	WRITTEN EXAMINATION						10
9-10	Able to explain the meaning of arbitration. Able to set option prices. Able to set option prices through an arbitrage scheme. (CPMK-1)	Formative: accuracy of understanding Sumative: Precision in explaining the meaning of arbitrage. Precision in setting option prices. Accuracy in determining option prices through an arbitrage scheme.	Formative Criteria: discipline, perseverance, activeness dinilai dengan rubrik 01 Sumative Criteria: Group task (15) dinilai dengan rubrik 02 Assessment Technique: Gagal diterjemahkan	Studying: Cooperative learning (Cooperative learning) This material was presented by Mr. Muhammad Dahlan, S.Sc., a practitioner from Bank Hasan Mitra. [2x3x60]		Arbitration Definition of Arbitration, option pricing, option pricing through an arbitrage scheme.	15

11-12	Able to prove the Arbitration Theorem. Able to describe the Binomial Model approach as a multi-period option scenario. (CPMK-2, CPMK-3)	Formative: Gagal diterjemahkan Sumative: Clarity in proving the Arbitrage Theorem. Accuracy in describing the binomial approach as a multi-period option scenario.	Formative Criteria: discipline, perseverance, activeness dinilai dengan rubrik 01 Sumative Criteria: Case Studies (10) dinilai dengan rubrik 01 Assessment Technique: Gagal diterjemahkan			Integral The arbitrage theorem and its proof, determining multi-period options using the binomial model approach.	10
-------	---	---	--	--	--	---	----

13-15	Able to understand the Black-Scholes formulation.Able to identify the characteristics of option costs using the Black-Scholes formula.Able to outline delta Hedging arbitrage strategies.Able to decipher several derivatives. The option purchase price with the initial price follows the Black-Scholes process.Be able to describe the properties of monotonicity and convexity of European put options. (CPMK-2, CPMK-3)	Formative: accuracy of understanding Sumative: Accuracy in describing the Black-Scholes formulation. Accuracy in identifying the cost characteristics of options using the Black-Scholes formula. Accuracy in describing the delta Hedging arbitrage strategy. Accuracy in describing derivatives. Option purchase prices with initial prices follow the Black-Scholes formula and obtain the properties of the purchase option equation using order partial derivatives two. Accuracy in describing the properties of monotonicity and convexity of European Put Options.	Formative Criteria: Sumative Criteria: Case Studies (15) dinilai dengan rubrik 02 Assessment Technique: Gagal diterjemahkan			Black-Scholes Formula on Option prices Black-Scholes Formulation, Identification of option characteristics, delta hedging arbitrage strategy, option purchase price derivative, monotonicity, convex properties and concave properties of European put option prices	15
16	WRITTEN EXAMINATION						10
							100

Matrix of SLO, CLO, and Assessment Method

SLO / CLO	CLO-1	CLO-2	CLO-3
CPL-1 (ILO 1)	Independent Assignment (Weight 5%) Case Studies (Weight 10%) Independent Assignment (Weight 10%) Case Studies (Weight 15%) Group task (Weight 15%)		
CPL-2 (P2)		Case Studies (Weight 15%) Case Studies (Weight 10%) Case Studies (Weight 15%)	Case Studies (Weight 10%) Case Studies (Weight 15%)
CPL-4 (KU2)		Case Studies (Weight 15%) Case Studies (Weight 10%) Case Studies (Weight 15%)	
CPL-5 (KK1)			Case Studies (Weight 10%) Case Studies (Weight 15%)
CPL-7 (KK3)			Case Studies (Weight 10%) Case Studies (Weight 15%)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Independent Assignment	15
Case Studies	50
Group task	15
Written Exam	10
Written Exam	10
Total	100

Assessment and Evaluation of Student Achievement of CLOs

SLOs that are charged on the Course	CLO	SUB CLO	Form of Assessment*						Weight	Value	Student Score
			Formative	Sumative							
				Independent Assignment	Case Studies	Group task	Written Exam	Written Exam			
SLO-1	CLO-1	SUB-CLO-1	discipline, perseverance, activeness and discipline, perseverance, activeness	5	10	0	0	0	15		
SLO-1	CLO-1	SUB-CLO-2	discipline, perseverance, activeness	10	0	0	4	0	14		
SLO-4	CLO-2	SUB-CLO-4	discipline, perseverance, activeness	0	15	0	6	0	21		
SLO-1	CLO-1	SUB-CLO-5	discipline, perseverance, activeness	0	0	15	0	3.75	18.75		
SLO-7	CLO-3	SUB-CLO-6	discipline, perseverance, activeness	0	10	0	0	2.5	12.5		
SLO-7	CLO-3	SUB-CLO-7		0	15	0	0	3.75	18.75		
				15	50	15	10	10	100		

Lampiran Rubrik 01 | ASSESMENT TERTULIS

Kriteria Penilaian	Bobot/Skor Penilaian				
	5	4	3	2	1/0
Konsep/ metode yang digunakan	Penjelasan konsep /metode (*) sangat lengkap dan akurat	Penjelasan konsep/metode (*) cukup jelas tetapi beberapa informasi tidak dituliskan secara lengkap.	Penjelasan konsep/metode (*) kurang jelas dan banyak informasi yang tidak dituliskan	Penjelasan yang dituliskan hampir tidak berkaitan dengan konsep/ metode (*)	Tidak memberikan konsep yang dibutuhkan
Sistematika penulisan/ pembuktian	Sistematika penulisan/ pembuktian sangat jelas dan terstruktur	Sistematika penulisan/ pembuktian cukup jelas namun ada langkah yang hilang	Sistematika penulisan/ pembuktian kurang jelas	Sistematika penulisan/ pembuktian tidak jelas	Jawaban tidak benar/ tidak ada
Interpretasi geometri/ kualitatif/ kuantitatif.	Interpretasi geometri/ kualitatif/ kuantitatif (*) tepat dan lengkap	Interpretasi geometri/ kualitatif/ kuantitatif (*) cukup lengkap/ tepat	Interpretasi geometri/ kualitatif/ kuantitatif (*) kurang lengkap/ tepat	Interpretasi geometri/ kualitatif/ kuantitatif (*) tidak lengkap/ tepat	Interpretasi geometri/ kualitatif/kuantitatif(*) tidak benar
Perhitungan/kesimpulan	Perhitungan/ kesimpulan sangat akurat/tepat dan disertai alasan yang mendasarinya	Perhitungan/ kesimpulan cukup akurat/tepat dan disertai alasan yang mendasarinya	Kesimpulan cukup tepat, namun tidak disertai alasan yang jelas	Perhitungan/ kesimpulan kurang akurat/tepat dan tidak disertai alasan yang mendasarinya	Perhitungan/kesimpulan salah

Lampiran Rubrik 02 | ASSESMENT PRESENTASI

Kriteria Penilaian	Bobot/Skor Penilaian				
	5	4	3	2	1
Penguasaan Materi	Mahasiswa sangat menguasai materi	Mahasiswa menguasai materi	Mahasiswa cukup menguasai materi	Mahasiswa kurang menguasai materi	Mahasiswa tidak menguasai materi
Sistematika Penyajian	Mahasiswa menyajikan materi presentasi dengan sangat sistematis	Mahasiswa menyajikan materi presentasi dengan sistematis	Mahasiswa menyajikan materi presentasi dengan cukup sistematis	Mahasiswa menyajikan materi presentasi dengan kurang sistematis	Mahasiswa menyajikan materi presentasi dengan tidak sistematis
Suara dan Ekspresi	Mahasiswa menjelaskan dengan suara yang sangat jelas, volume yang sangat sesuai, pengucapan istilah sangat tepat	Mahasiswa menjelaskan dengan suara yang jelas, volume yang sesuai, pengucapan istilah tepat	Mahasiswa menjelaskan dengan suara yang cukup jelas, volume yang cukup sesuai, pengucapan istilah cukup tepat	Mahasiswa menjelaskan dengan suara yang kurang jelas, volume yang kurang sesuai, pengucapan istilah kurang tepat	Mahasiswa menjelaskan dengan suara yang tidak jelas, volume yang tidak sesuai, pengucapan istilah tidak tepat
Kepercayaan Diri	Mahasiswa berbicara dengan sangat semangat, menularkan semangat dan antusiasme pada pendengar, eye contact ke semua peserta (audience)	Mahasiswa berbicara dengan semangat, menularkan semangat dan antusiasme pada pendengar, eye contact ke semua peserta (audience)	Mahasiswa berbicara dengan cukup semangat, cukup menularkan semangat dan antusiasme pada pendengar, eye contact ke semua peserta (audience)	Mahasiswa berbicara dengan kurang semangat, kurang menularkan semangat dan antusiasme pada pendengar, eye contact yang kurang ke semua peserta (audience)	Mahasiswa berbicara dengan tidak semangat, tidak dapat menularkan semangat dan antusiasme pada pendengar, tidak ada eye contact ke semua peserta (audience)
Kemampuan menjawab pertanyaan	Mahasiswa mampu menjawab semua pertanyaan dengan sangat tepat, sangat mendalam (lebih dari yang dibutuhkan), dan sangat tajam	Mahasiswa mampu menjawab semua pertanyaan dengan tepat, mendalam (lebih dari yang dibutuhkan), dan tajam	Mahasiswa mampu menjawab semua pertanyaan dengan cukup tepat, cukup mendalam, dan cukup tajam	Mahasiswa mampu menjawab semua pertanyaan dengan kurang tepat, kurang mendalam, dan kurang tajam	Mahasiswa mampu menjawab semua pertanyaan dengan tidak tepat, tidak mendalam, dan tidak tajam
Keperimpinan presentasi kelompok)	Mahasiswa sangat mampu menginisiasi, menggerakkan, mengarahkan, mengorganisir jalannya presentasi	Mahasiswa mampu menginisiasi, menggerakkan, mengarahkan, mengorganisir jalannya presentasi	Mahasiswa cukup mampu menginisiasi, menggerakkan, mengarahkan, mengorganisir jalannya presentasi	Mahasiswa kurang mampu menginisiasi, menggerakkan, mengarahkan, mengorganisir jalannya presentasi	Mahasiswa tidak mampu menginisiasi, menggerakkan, mengarahkan, mengorganisir jalannya presentasi