

SEMESTER LEARNING PLAN

**OPPORTUNITY THEORY COURSES
(23H01120303)**



TEACHING TEAM

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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-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 probability as a relative frequency that stabilizes random experiments and its properties based on the concept of sets and set functions. (CPL1)

CPMK-2: Students can understand the characteristics and distribution functions of univariate and multivariate random variables. (CPL1)

CPMK-3: Students can determine the mean, variance, probability distribution function and distribution function of univariate and multivariate random variables. (CPL2)

CPMK-4: Students can determine the distribution and expectation functions of univariate and multivariate random variables by using variable transformations. (CPL2)

CPMK-5: Students are able to communicate mathematical ideas in an appropriate context both orally and in writing with the group. (CPL5 dan CPL7)

Sub-CLO

Sub CPMK-1: Able to explain the meaning of random experiments, sample space, events, review of set

theory, relative frequency, conditional probability, independence, and discrete random variables. (CPMK-1)

Sub CPMK-2: Able to explain the meaning of continuous random variables, derive the properties of distribution functions, expectations of random variables, special expectations, Chebysev inequality. (CPMK-2 dan CPMK-3)

Sub CPMK-3: Be able to explain the meaning of special expectations, Chebysev inequality (CPMK-2, CPMK-3 dan CPMK-4)

Sub CPMK-4: Able to develop the concept of probability in cases of multiple random variables (CPMK-1 dan CPMK-2)

Sub CPMK-6: Recognize some special distributions (CPMK-2, CPMK-3 dan CPMK-4)

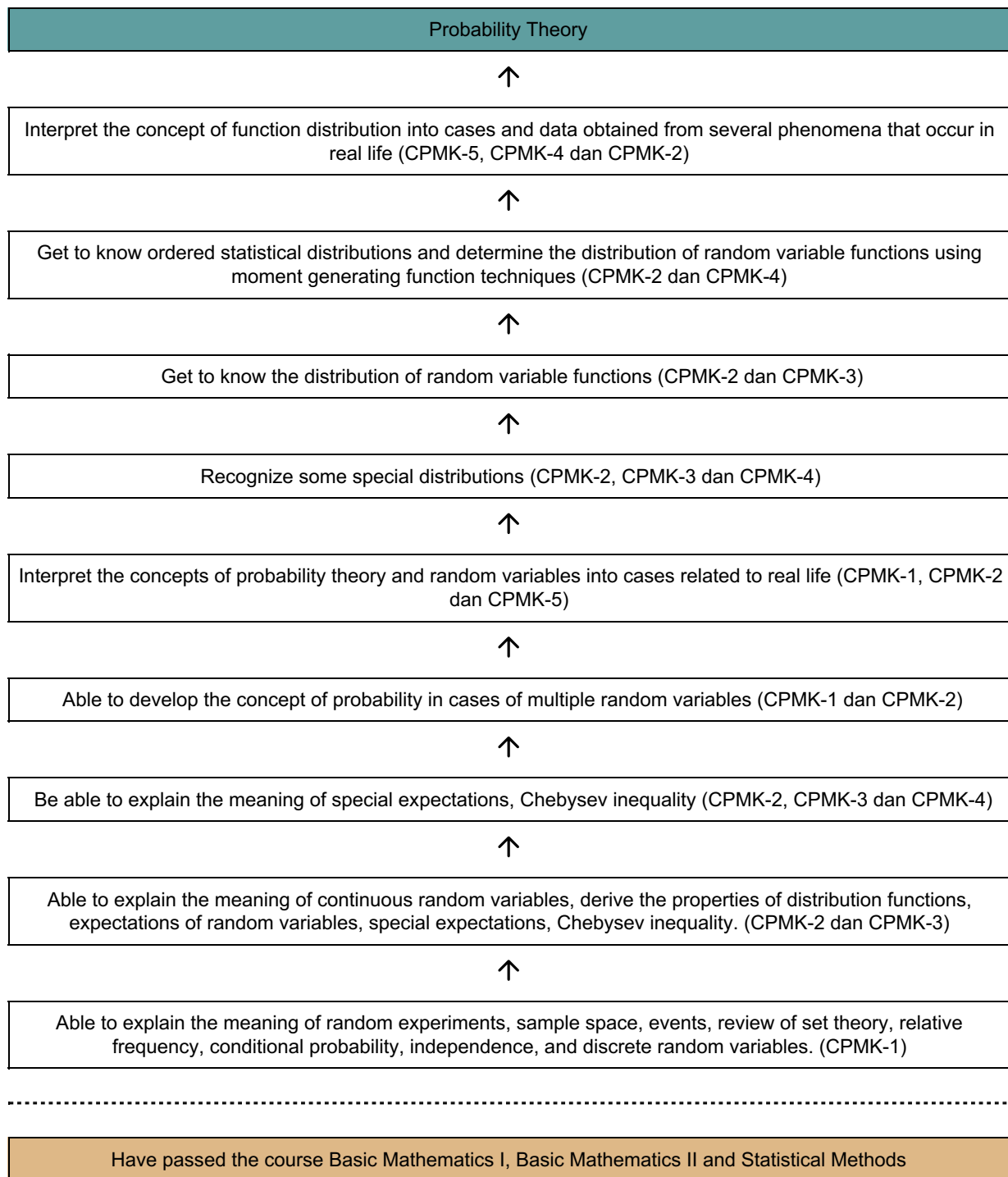
Sub CPMK-7: Get to know the distribution of random variable functions (CPMK-2 dan CPMK-3)

Sub CPMK-8: Get to know ordered statistical distributions and determine the distribution of random variable functions using moment generating function techniques (CPMK-2 dan CPMK-4)

Sub CPMK-5: Interpret the concepts of probability theory and random variables into cases related to real life (CPMK-1, CPMK-2 dan CPMK-5)

Sub CPMK-9: Interpret the concept of function distribution into cases and data obtained from several phenomena that occur in real life (CPMK-2, CPMK-4 dan CPMK-5)

Learning Analytics





HASANUDDIN UNIVERSITY

FAKULTY OF MATHEMATICS AND NATURAL SCIENCES

STUDY PROGRAM OF MATHEMATICS - S1

SEMESTER LEARNING PLAN

Course		Code	Course Group	Credits	SEMESTER	Compilation Date
Probability Theory		23H01120303	Applied Mathematics	3	3	10 Agustus 2024
AUTHORITY		SLP Developer Lecturer	Coordinator		Head of Study Program	
		Dr. Firman, S.Si.,M.Si., Nur Rohmah Oktaviani Putri, S.Si., M.Si	Dr. Firman, S.Si.,M.Si.		Dr. Firman, S.Si.,M.Si.	
	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-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 probability as a relative frequency that stabilizes random experiments and its properties based on the concept of sets and set functions.				
		CLO-2: Students can understand the characteristics and distribution functions of univariate and multivariate random variables.				
	SLO-2	CLO-3: Students can determine the mean, variance, probability distribution function and distribution function of univariate and multivariate random variables.				
		CLO-4: Students can determine the distribution and expectation functions of univariate and multivariate random variables by using variable transformations.				
	SLO-5	CLO-5: Students are able to communicate mathematical ideas in an appropriate context both orally and in writing with the group.				
	SLO-7	CLO-5: Students are able to communicate mathematical ideas in an appropriate context both orally and in writing with the group.				
	CLO ⇒ Sub-CLO					
	CLO-1	Sub-CLO-1:Able to explain the meaning of random experiments, sample space, events, review of set theory, relative frequency, conditional probability, independence, and discrete random variables.				
		Sub-CLO-4:Able to develop the concept of probability in cases of multiple random variables				

Learning Outcomes Course		Sub-CLO-5:Interpret the concepts of probability theory and random variables into cases related to real life									
	CLO-2	Sub-CLO-2:Able to explain the meaning of continuous random variables, derive the properties of distribution functions, expectations of random variables, special expectations, Chebysev inequality.									
		Sub-CLO-3:Be able to explain the meaning of special expectations, Chebysev inequality									
		Sub-CLO-4:Able to develop the concept of probability in cases of multiple random variables									
		Sub-CLO-6:Recognize some special distributions									
		Sub-CLO-7:Get to know the distribution of random variable functions									
		Sub-CLO-8:Get to know ordered statistical distributions and determine the distribution of random variable functions using moment generating function techniques									
		Sub-CLO-5:Interpret the concepts of probability theory and random variables into cases related to real life									
		Sub-CLO-9:Interpret the concept of function distribution into cases and data obtained from several phenomena that occur in real life									
	CLO-3	Sub-CLO-2:Able to explain the meaning of continuous random variables, derive the properties of distribution functions, expectations of random variables, special expectations, Chebysev inequality.									
		Sub-CLO-3:Be able to explain the meaning of special expectations, Chebysev inequality									
		Sub-CLO-6:Recognize some special distributions									
		Sub-CLO-7:Get to know the distribution of random variable functions									
	CLO-4	Sub-CLO-3:Be able to explain the meaning of special expectations, Chebysev inequality									
		Sub-CLO-6:Recognize some special distributions									
		Sub-CLO-8:Get to know ordered statistical distributions and determine the distribution of random variable functions using moment generating function techniques									
		Sub-CLO-9:Interpret the concept of function distribution into cases and data obtained from several phenomena that occur in real life									
	CLO-5	Sub-CLO-5:Interpret the concepts of probability theory and random variables into cases related to real life									
		Sub-CLO-9:Interpret the concept of function distribution into cases and data obtained from several phenomena that occur in real life									
	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	Quiz	Case Studies	Written Exam	Written Exam			
SLO-2	CLO-3	SUB-CLO-2	Question and answer	5	0	0	7.5	7.5	20		

SLOs that are charged on the Course			CPMK	SUB CPMK	Form of Assessment*				Weight	Value	Student Score		
					Formative	Sumative							
						Independent Assignment	Quiz	Case Studies				Written Exam	Written Exam
SLO-2	CLO-4	SUB-CLO-3	Question and answer	0	5	0	7.5	7.5	20				
SLO-7	CLO-5	SUB-CLO-5	Question and answer	0	0	25	0	0	25				
SLO-2	CLO-3	SUB-CLO-7	Question and answer	0	10	0	0	0	10				
SLO-1	CLO-2	SUB-CLO-9	Question and answer	0	0	25	0	0	25				
				5	15	50	15	15	100				
Course Description			Probability Theory is a mandatory course that provides understanding and development of skills in a form of probability theory which is used as the basis for developing statistical theory based on mathematical concepts. This course provides students with the opportunity to understand the basic theory of probability and solve problems related to probability theory. The learning material in this course includes understanding probability and distribution, multivariable distribution, several special distributions, distribution of random variable functions, and distribution limits. Several concepts for the development of probability theory related to the distribution of random variables are also discussed, including the transformation function of random variables and convergence which can be used to determine the distribution of random variables.										
Learning Materials/Subjects			1. Introduction to Probability Theory 2. Multivariate distributions 3. Some special distribution (Distribution of function of random variables) 4. Limiting distributions										
Reference			Main References										
			1. Robert V. Hogg and Allen T. Craig, 1995, Introduction to Mathematical Statistics, Fifth Edition 2. Wakerly, D., Mendenhall III, W. Scheaffer, R., 2008. Mathematical Statistics with Application, Ed. 7th, Thomson, Canada.										
			Additional References										
			1. Ekasasmita, W.; Bahri, M.; Bachtiar, N.; Rahim, A.; Nur, M. One-Dimensional Quaternion Fourier Transform with Application to Probability Theory <i>Symmetry</i> 2023 , 15, 815. https://doi.org/10.3390/sym15040815										
Teaching Team			Dr. Firman, S.Si.,M.Si., Nur Rohmah Oktaviani Putri, S.Si., M.Si										
Course requirement			Basic Mathematics I, Basic Mathematics II, Statistical Methods										
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 explain the meaning of random experiments, sample space, events, review of set theory, relative frequency, conditional probability, independence, and discrete random variables. (CPMK-1)	Formative: - Attitude assessment - Activity in questions and answers - Accuracy of understanding Sumative:	Formative Criteria: Question and answer dinilai dengan rubrik 02 Sumative Criteria: Assessment Technique: Non Test	Studying: Group discussion (Small Group Discussion) 3x50		College contracts, introduction to probability, review of set theory, probability function with domains in the form of sets, conditional probability, independence, and discrete type random variables.	0
2-3	Able to explain the meaning of continuous random variables, derive the properties of distribution functions, expectations of random variables, special expectations, Chebysev inequality. (CPMK-2, CPMK-3)	Formative: - Attitude assessment - Activity in questions and answers - Accuracy of understanding Sumative: Accuracy in explaining concepts with examples; Clarity of Description; The latest innovative library materials	Formative Criteria: Question and answer dinilai dengan rubrik 04 Sumative Criteria: Independent Assignment (5) dinilai dengan rubrik 01 Assessment Technique: Test and Non-Test	Studying: Discovery Learning 2x3x50		Random variables of continuous type, Properties of distribution functions, Random variable expectation	5

4	Be able to explain the meaning of special expectations, Chebysev inequality (CPMK-2, CPMK-3, CPMK-4)	Formative: • Attitude assessment • Activity in questions and answers Sumative: Accuracy in solving related problems concept	Formative Criteria: Question and answer dinilai dengan rubrik 02 Sumative Criteria: Quiz (5) dinilai dengan rubrik 01 Assessment Technique: Test	Studying: Discovery Learning 3x50		Some special expectations, and Inequality Chebysev	5
5	Able to develop the concept of probability in cases of multiple random variables (CPMK-1, CPMK-2)	Formative: • Attitude assessment • Activity in questions and answers • Accuracy of understanding Sumative:	Formative Criteria: Question and answer dinilai dengan rubrik 04 Sumative Criteria: Assessment Technique: Non Test	Studying: Discovery Learning 3x50		Distribution of multiple random variables, conditional distribution, conditional distribution expectation, correlation coefficient, independence of random variables	0

6-7	Interpret the concepts of probability theory and random variables into cases related to real life (CPMK-1, CPMK-2, CPMK-5)	Formative: • Attitude assessment • Activity in questions and answers Sumative: Capabilities interpret the concepts of probability theory and random variables into cases related to real life	Formative Criteria: Question and answer dinilai dengan rubrik 04 Sumative Criteria: Case Studies (25) dinilai dengan rubrik 03 Assessment Technique: Test and Non-Test	Other Forms: Case Study (Case Study) Group Assignment in week 6: 1. Student explore ideas by conducting journal, web or reference literature studies other 2. Lecturer give each group the task of going directly to the field to do it looking for cases that can be implemented into the concept of opportunity theory 3x50 Other Forms: Case Study (Case Study) Presentation Group in week 7: Student present the results of their discussion in class and respond directly to them other students, the lecturer acts as a facilitator 3x50	Implementation cases related to probability theory and random variables	25
8	Written Exam					15

9-10	Recognize some special distributions (CPMK-2, CPMK-3, CPMK-4)	Formative: • Attitude assessment • Activity in questions and answers • Accuracy of understanding Sumative: Gagal diterjemahkan	Formative Criteria: Question and answer dinilai dengan rubrik 02 Sumative Criteria: Assessment Technique: Non Test	Studying: Group discussion (Small Group Discussion), Discovery Learning 2x3x50		Distribution Binomials and their relationship to other distributions, the Poisson distribution, Gamma and Chi-Square Distributions, Normal Distribution	0
11-12	Get to know the distribution of random variable functions (CPMK-2, CPMK-3)	Formative: • Attitude assessment • Activity in questions and answers Sumative: Ability to solve problems related to the distribution of random variable functions	Formative Criteria: Question and answer dinilai dengan rubrik 04 Sumative Criteria: Quiz (10) dinilai dengan rubrik 01 Assessment Technique: Test	Studying: Discovery Learning Quiz in week 12 2x3x50		Theory Sampling, Transformation of discrete type variables, Transformation of type variables continuous, Beta distribution, t distribution, F distribution	10
13	Get to know ordered statistical distributions and determine the distribution of random variable functions using moment generating function techniques (CPMK-2, CPMK-4)	Formative: • Attitude assessment • Activity in questions and answers • Accuracy of understanding Sumative: Gagal diterjemahkan	Formative Criteria: Question and answer dinilai dengan rubrik 04 Sumative Criteria: Assessment Technique: Non Test	Studying: Discovery Learning 3x50		Expansion variable change techniques, ordered statistical distributions, function techniques moment generator, mean distribution, and ns^2/s^2 ,	0

14-15	Interpret the concept of function distribution into cases and data obtained from several phenomena that occur in real life (CPMK-5, CPMK-4, CPMK-2)	Formative: • Attitude assessment • Activity in questions and answers Sumative: Ability to solve cases related to the concept of function distribution	Formative Criteria: Question and answer dinilai dengan rubrik 04 Sumative Criteria: Case Studies (25) dinilai dengan rubrik 02 Assessment Technique: Test and Non-Test	Studying: Case Study (Case Study) 1. Lecturer provide several real cases or problems 2. Student explore ideas related to the case through literature study journals, web, or other references and model them into distributions function 3x3x50		The concept of distribution of functions into cases and data which is obtained from several phenomena that occur in real life	25
16	Written Exam						15
							100

Matrix of SLO, CLO, and Assessment Method

SLO / CLO	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5
CPL-1 (ILO 1)	Case Studies (Weight 25%)	Independent Assignment (Weight 5%) Quiz (Weight 5%) Quiz (Weight 10%) Case Studies (Weight 25%) Case Studies (Weight 25%)			
CPL-2 (P2)			Independent Assignment (Weight 5%) Quiz (Weight 5%) Quiz (Weight 10%)	Quiz (Weight 5%) Case Studies (Weight 25%)	
CPL-5 (KK1)					Case Studies (Weight 25%) Case Studies (Weight 25%)
CPL-7 (KK3)					Case Studies (Weight 25%) Case Studies (Weight 25%)

Evaluation Type and Assessment Weight

Type	Assessment Weight
Independent Assignment	5
Quiz	15
Case Studies	50
Written Exam	15
Written Exam	15
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	Quiz	Case Studies	Written Exam	Written Exam			
SLO-2	CLO-3	SUB-CLO-2	Question and answer	5	0	0	7.5	7.5	20		
SLO-2	CLO-4	SUB-CLO-3	Question and answer	0	5	0	7.5	7.5	20		
SLO-7	CLO-5	SUB-CLO-5	Question and answer	0	0	25	0	0	25		
SLO-2	CLO-3	SUB-CLO-7	Question and answer	0	10	0	0	0	10		
SLO-1	CLO-2	SUB-CLO-9	Question and answer	0	0	25	0	0	25		
				5	15	50	15	15	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 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
Kepemimpinan 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

Lampiran Rubrik 03 | ASSESMENT MAKALAH

Kriteria Penilaian	Bobot/Skor Penilaian				
	5	4	3	2	1
Sistematika dan kelengkapan penulisan	Mahasiswa menyusun laporan dengan sistematika yang sangat sesuai dengan format yang diberikan dan sangat lengkap	Mahasiswa menyusun laporan dengan sistematika yang sesuai dengan format yang diberikan dan lengkap	Mahasiswa menyusun laporan dengan sistematika yang cukup sesuai dengan format yang diberikan dan cukup lengkap	Mahasiswa menyusun laporan dengan sistematika yang kurang sesuai dengan format yang diberikan dan kurang lengkap	Mahasiswa menyusun laporan dengan sistematika yang tidak sesuai dengan format yang diberikan dan tidak lengkap
Kebenaran konsep ide yang dipaparkan	Mahasiswa menyusun makalah dengan konsep/ide yang dipaparkan dengan sangat tepat (sesuai dengan teori)	Mahasiswa menyusun makalah dengan konsep/ide yang dipaparkan dengan tepat	Mahasiswa menyusun makalah dengan konsep/ide yang dipaparkan dengan cukup tepat	Mahasiswa menyusun makalah dengan konsep/ide yang dipaparkan dengan kurang tepat	Mahasiswa menyusun makalah dengan konsep/ide yang dipaparkan dengan tidak tepat
Interpretasi metode dengan permasalahan yang dikaji	Mahasiswa sangat mampu mengidentifikasi relevansi metode dengan permasalahan yang dikaji	Mahasiswa mampu mengidentifikasi relevansi metode dengan permasalahan yang dikaji	Mahasiswa cukup mampu mengidentifikasi relevansi metode dengan permasalahan yang dikaji	Mahasiswa kurang mampu mengidentifikasi relevansi metode dengan permasalahan yang dikaji	Mahasiswa tidak mampu mengidentifikasi relevansi metode dengan permasalahan yang dikaji
Validitas Referensi – VR	Mahasiswa menggunakan referensi yang sangat up to date dan sangat relevan	Mahasiswa menggunakan referensi yang up to date dan relevan	Mahasiswa menggunakan referensi yang cukup up to date dan cukup relevan	Mahasiswa menggunakan referensi yang kurang up to date dan kurang relevan	Mahasiswa menggunakan referensi yang tidak up to date dan tidak relevan
Ketepatan waktu	Mahasiswa mengumpulkan makalah tepat waktu atau sebelum batas waktu yang ditentukan.	Mahasiswa mengumpulkan makalah lewat 1 hari dari batas waktu yang ditentukan.	Mahasiswa mengumpulkan makalah lewat 2 hari dari batas waktu yang ditentukan.	Mahasiswa mengumpulkan makalah lewat 3 hari dari batas waktu yang ditentukan.	Mahasiswa mengumpulkan makalah lewat 4 hari atau lebih dari batas waktu yang ditentukan.