



INSTITUT TEKNOLOGI SEPULUH NOPEMBER
FAKULTAS SAINS DAN ANALITIKA DATA
PROGRAM STUDI MAGISTER STATISTIKA
DEPARTEMEN STATISTIKA

Kode Dokumen

REV-1

RENCANA PEMBELAJARAN SEMESTER

MATA KULIAH (MK)		KODE	Rumpun MK	BOBOT (sks)		SEMESTER	Tgl Penyusunan
Statistika Inferensia		SS255201	Statistika dan Sains Data Lingkungan dan Kesehatan	T=3	P=0	II	Agustus 2026
OTORISASI		Pengembang RPS		Koordinator RMK		Kepala PRODI	
		Prof. Dr. Drs. I Nyoman Budiantara, M.Si.		Prof. Dr. Drs. Bambang Widjanarko Otok, S.Si, M.Si		Irhamah, S.Si, M.Si, Ph.D.	
Capaian Pembelajaran (CP) <i>Learning Outcome (LO)</i>	CPL-PRODI yang dibebankan pada MK						
	CPL-4 <i>PLO-4</i>	Mampu menganalisis dan mengintegrasikan Teori Statistika dalam merumuskan metode statistika yang inovatif untuk menyelesaikan permasalahan teoritis dan riil. <i>Able to analyze and integrate statistical theory to formulate innovative statistical methods for solving both theoretical and real-world problems.</i>					
	Capaian Pembelajaran Mata Kuliah (CPMK)						
	CPMK-1	Mampu menjelaskan konsep distribusi sampling, definisi penaksiran titik, penaksiran interval, sifat-sifat penaksir, fungsi kerugian dan resiko, Keluarga Eksponensial , statistik kecukupan, kriteria faktorisasi statistik kecukupan minimal. konsep Ketidakbiasan, <i>Able to explain the concept of sampling distribution, definition of point estimation, interval estimation, properties of estimators, loss and risk functions, Exponential Families, sufficiency statistics, minimum sufficiency statistical factorization criteria. Unusualness concept,</i>					
	CPMK-2	Mampu menjelaskan konsep Equivariance, Pengujian Hipotesis, penentuan statistik uji. <i>Able to explain the concept of Equivariance, Hypothesis Testing, and determination of test statistics.</i>					
	CPMK-3	Mampu menjelaskan konsep pengujian Hipotesis untuk proporsi, dua proporsi, Uji selisih dua mean, Uji beda dua variasi <i>Able to explain the concept of testing Hypothesis for proportions, two proportions, Difference test of two means, Difference test of two variations</i>					
	CPMK-4	Mampu menjelaskan konsep Bentuk kanonik, Metode Kuadrat terkecil, Uji kesamaan k-mean, uji perbandingan Analisis regresi. Analisis variasi dua arah, Anacova , Manova. <i>Able to explain the concept of Canonical Shapes, Smallest Square Method, K-mean similarity test, Regression analysis comparison test. Bidirectional variation analysis, Anacova, Manova.</i>					

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Mg Ke-	Kemampuan akhir tiap tahapan belajar (Sub-CPMK)	Penilaian		Bentuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu]		Materi Pembelajaran [Pustaka]	Bobot Penilaian (%)
		Indikator	Kriteria & Bentuk	Luring (offline)	Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Mampu menjelaskan konsep distribusi sampling Able to explain the concept of sampling distribution	1. Mampu menjelaskan dan memberi contoh tentang distribusi sampling. 2. Mampu menentukan distribusi sampling Binomial, Geometrik, Hipergeometrik, Binomial negative 3. Mampu menentukan distribusi sampling Uniform, Gamma, Eksponensial, Normal, normal bivariat, beta, weibull 1. Able to explain and give examples of sampling distribution. 2. Able to determine the sampling distribution of Binomial, Geometric, Hypergeometric, negative Binomial 3. Able to determine the sampling distribution of Uniform, Gamma, Exponential, Normal, bivariate normal, beta, weibull	Tes tulis Tugas 1 Observasi di kelas writing test Task 1 Observation in class	Ceramah, diskusi dan latihan soal 150 Menit Lectures, discussions and exercises 150 Minutes		Distribusi sampling Sampling distribution	10%/10%
2-3	Mampu menjelaskan definisi penaksiran titik, penaksiran interval. Able to explain the definition of point estimation, interval estimation.	1. Mampu menerangkan, memberi contoh ukuran kualitas penaksiran, penaksiran titik, penaksiran interval. 2. Mampu menerapkan metode penentuan penaksiran pada berbagai distribusi 3. Mampu mengetahui kelebihan dari masing-masing metode penentuan penaksiran tersebut. 1. Able to explain, give examples of quality assessment measures, point estimates, interval estimates. 2. Able to apply estimation determination methods on various distributions 3. Able to know the advantages of each method of determining the estimation.	Tes tulis Tugas 1 Observasi di kelas writing test Task 1 Observation in class	Ceramah, diskusi dan latihan soal 300 Menit Lectures, discussions and exercises 300 Minutes		Penaksiran, penaksiran titik, penaksiran interval metode penentuan penaksir estimating, point estimating, interval estimating estimator determination method	15%/25%
4	Mampu menjelaskan sifat-sifat penaksir, fungsi kerugian dan resiko Able to explain the properties of the estimator, the function of loss and risk	1. Dapat menerangkan dan menghubungkan sifat-sifat penaksiran, fungsi resiko, penaksiran admissible, minimax 2. Mampu menentukan sifat-sifat penaksir parameter dari distribusi diskrit dan kontinyu 1. Able to explain and connect estimation properties, risk functions, admissible estimation, minimax 2. Able to determine the properties of parameter	Tes tulis Tugas 2 Observasi di kelas writing test Task 2 Observation in class	Ceramah, diskusi dan latihan soal 150 Menit Lectures, discussions and exercises 150 Minutes		Sifat-sifat penaksir, fungsi kerugian dan resiko Estimator properties, loss and risk functions	10%/35%

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		Indikator	Kriteria & Bentuk	Luring (offline)	Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		estimators from discrete and continuous distributions					
5-6	Mampu menjelaskan konsep Keluarga Eksponensial , statistik kecukupan, kriteria faktorisasi statistik kecukupan minimal. Able to explain the concept of Exponential Family, adequacy statistics, minimum adequacy statistical factorization criteria.	Dapat menerangkan, memberi contoh Keluarga Eksponensial ,statistik kecukupan, kriteria faktorisasi statistik kecukupan minimal dari distribusi diskrit dan kontinyu baik untuk satu dan beberapa parameter. Able to explain, give examples of exponential families, adequacy statistics, statistical factorization criteria for minimum adequacy of discrete and continuous distributions for one and several parameters.	Tes tulis Tugas 2 Observasi di kelas writing test Task 2 Observation in class	Ceramah, diskusi dan latihan soal 300 Menit Lectures, discussions and exercises 300 Minutes		Keluarga Eksponensial Statistik Kecukupan. Family Exponential Sufficiency Statistics.	10%/45%
7-8	Mampu menjelaskan konsep Ketidakbiasan Able to explain the concept of unusual	1. Mampu menjelaskan dan menentukan penaksiran UMVU pada masalah satu atau dua sampel pada distribusi normal dan eksponensial 2. Mampu menentukan penaksir UMVU pada distribusi diskrit 1. Able to explain and determine UMVU estimation on one or two sample problems in normal and exponential distributions 2. Able to determine UMVU estimator on discrete distribution	Tes tulis Tugas 2 Observasi di kelas writing test Task 2 Observation in class	Ceramah, diskusi dan latihan soal 300 Menit Lectures, discussions and exercises 300 Minutes		Ketidakbiasan Unusual	10%/55%
9	Mampu menjelaskan konsep Equivariance Able to explain the concept of Equivariance	1. Mampu menjelaskan pengertian parameter lokasi, skala. 2. Dapat menerangkan, menentukan Equivariance pada model linier. 1. Able to explain the meaning of location parameters, scale. 2. Able to explain, determine Equivariance in linear models.	Tes tulis Tugas 3 Observasi di kelas writing test Task 3 Observation in class	Ceramah, diskusi dan latihan soal 150 Menit Lectures, discussions and exercises 150 Minutes		Equivariance Equivariance	10%/65%
10-	Mampu menjelaskan konsep Pengujian	1. Mampu menjelaskan tentang konsep pengujian hipotesis 2. Mampu menentukan statistik uji untuk berbagai hipotesis	Tes tulis Tugas 4	Ceramah, diskusi dan		Pengujian Hipotesis	10%/75%

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		Indikator	Kriteria & Bentuk	Luring (offline)	Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12	Hipotesis, penentuan statistik uji Able to explain the concept of Hypothesis Testing, determination of test statistics	dengan menggunakan metoda teorema N-P, UMPT, GLRT, baik Variabel random diskrit dan kontinyu. 1. Able to explain the concept of hypothesis testing 2. Able to determine the test statistics for various hypotheses using the N-P theorem, UMPT, GLRT methods, both discrete and continuous random variables.	Observasi di kelas writing test Task 4 Observation in class	latihan soal 450 Menit Lectures, discussions and exercises 450 Minutes		Hypothesis test	
13	Mampu menjelaskan konsep pengujian Hipotesis untuk proporsi, dua proporsi, Uji selisih dua mean, Uji beda dua variasi Able to explain the concept of hypothesis testing for proportions, two proportions, the difference of two means test, the difference between two variations test	Dapat menerangkan, dan menerapkan , UMPT, GLRT pada uji proporsi, dua proporsi, Uji selisih dua mean, Uji beda dua variasi Able to explain, and apply, UMPT, GLRT on the test of proportions, two proportions, Test the difference of two means, Test the difference of two variations	Tes tulis Tugas 4 Observasi di kelas writing test Task 4 Observation in class	Ceramah, diskusi dan latihan soal 150 Menit Lectures, discussions and exercises 150 Minutes		Pengujian Hipotesis proporsi, dua proporsi, Uji selisih dua mean, Uji beda dua variasi Hypothesis test proportion, two proportions, Test the difference of two means, Test the difference of two variations	10%/85%
14	Mampu menjelaskan konsep Bentuk kanonik, Metode Kuadrat terkecil, Uji kesamaan k-mean, uji perbandingan Able to explain the concept of canonical form, least squares method, k-mean similarity test,	1. Mampu menjelaskan tentang konsep Bentuk kanonik, Metode Kuadrat terkecil, Uji kesamaan k-mean, uji perbandingan 2. Mampu menentukan statistik uji dan daerah penolakan uji kesamaan k-mean, uji perbandingan 1. Able to explain the concept of canonical form, least squares method, k-mean similarity test, comparison test 2. Able to determine test statistic and rejection area of k-mean similarity test, comparison test	Tes tulis Tugas 4 Observasi di kelas writing test Task 4 Observation in class	Ceramah, diskusi dan latihan soal 150 Menit Lectures, discussions and exercises 150 Minutes		Bentuk kanonik, Metode Kuadrat terkecil, Uji kesamaan k-mean, uji perbandingan Canonical form, Least Square Method, K-mean similarity test, comparison test	5%/90%

Mg Ke-	Kemampuan akhir tiap tahapan belajar (Sub-CPMK)	Penilaian		Bentuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu]		Materi Pembelajaran [Pustaka]	Bobot Penilaian (%)
		Indikator	Kriteria & Bentuk	Luring (offline)	Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	comparison test						
15	Mampu menjelaskan konsep Analisis regresi. Analisis variasi dua arah, Anacova, Manova. Able to explain the concept of regression analysis. Two-way analysis of variation, Anacova, Manova.	1. Dapat menerangkan dan menerapkan Analisis variasi dua arah analisis regresi metoda Scheffe's 2. Mampu menentukan statistic uji pada kasus satu dan dua sampel, Anacova, Manova, 1. Able to explain and apply two-way analysis of variation regression analysis Scheffe's method 2. Able to determine test statistics in cases of one and two samples, Anacova, Manova,	Tes tulis Tugas 4 Observasi di kelas writing test Task4 Observation in class	Ceramah, diskusi dan latihan soal 150 Menit Lectures, discussions and exercises 150 Minutes		Analisis regresi. Analisis variasi dua arah. Anacova Manova Regression analysis. Two-way analysis of variation. Anacova Manova	10%/100%