

# MODULE HANDBOOK

## INTRODUCTION TO PROBABILITY THEORY



**STATISTICS UNDERGRADUATE PROGRAM  
DEPARTMENT OF STATISTICS  
FACULTY OF SCIENCE AND DATA ANALYTICS  
INSTITUT TEKNOLOGI SEPULUH NOPEMBER  
SURABAYA**

## ENDORSEMENT PAGE



**MODULE HANDBOOK  
INTRODUCTION TO PROBABILITY  
THEORY  
STATISTICS UNDERGRADUATE PROGRAM  
DEPARTMENT OF STATISTICS  
INSTITUT TEKNOLOGI SEPULUH NOPEMBER**


Proses <i>Process</i>	Penanggung Jawab <i>Person in Charge</i>			Tanggal <i>Date</i>
	Nama <i>Name</i>	Jabatan <i>Position</i>	Tanda tangan <i>Signature</i>	
Perumus <i>Preparation</i>	Prof. Dr. I Nyoman Budiantara, M.Si	Dosen Lecturer		
Pemeriksa dan Pengendalian <i>Review and Control</i>	Prof. Dr. Drs. I Nyoman Budiantara, M.Si; Dr. Drs. Purhadi, M.Sc	Tim kurikulum Curriculum team		
Persetujuan <i>Approval</i>	Prof. Dr. I Nyoman Budiantara, M.Si	Koordinator RMK Course Cluster Coordinator		
Penetapan <i>Determination</i>	Dr. Kartika Fithriasari, M.Si	Kepala Departemen Head of Department		

# MODULE HANDBOOK

## INTRODUCTION TO PROBABILITY THEORY

Module name	INTRODUCTION TO PROBABILITY THEORY	
Module level	Undergraduate	
Code	SS234207	
Course (if applicable)	INTRODUCTION TO PROBABILITY THEORY	
Semester	2	
Person responsible for the module	Prof. Dr. I Nyoman Budiantara, M.Si	
Lecturer	Prof. Dr. Drs. I Nyoman Budiantara, M.Si; Dr. Drs. Purhadi, M.Sc	
Language	Bahasa Indonesia and English	
Relation to curriculum	Undergraduate degree program, mandatory, 2nd semester.	
Type of teaching, contact hours	Case Method (12,5%); Other SCL Methods (6,25%); Non SCL (81,25%)	
Workload	1. Lectures [L]: 3 x 50 = 150 minutes perweek. 2. Exercises and Assignments [EA] : 3 x 60 = 180 minutes (3 hours) perweek. 3. Independent learning [IL] : 3 x 60 = 180 minutes (3 hours)perweek.	
Credit points	3 credit points (SKS) Equivalent to 4.8 ECTS	
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.	
Mandatory prerequisites	-	
Learning outcomes and their corresponding PLOs	CLO.1 Mastering the concepts of random experiments, random variables, probability spaces, distribution functions, conditional distributions and stochastic freedom, mathematical expectations, moment generation functions, characteristic functions, distributions of discrete random variable functions, distributions of random variable functions kontinu, CLO.2 Can formulate problems of random experiments, random variables, probability spaces, distribution functions, conditional distributions and stochastic freedoms, mathematical expectations, moment-generating functions, characteristic functions, distributions of discrete random variable functions,	PLO-4 PLO-5

	<p>distributions of continuous random variable functions</p> <p>CLO.3 Can choose the method of determining the k-th moment, the distribution of the discrete random variable function, the distribution of the kontinu random variable function, and be able to adapt to probability problems, probability models</p> <p>CLO.4 Can formulate problems of random experiments, random variables, probability spaces, distribution functions, conditional distributions and stochastic freedom, mathematical expectations, moment-generat</p>	
Content	<p>Probability Theory is one of the basic courses that is part of the field of study in statistical theory. The purpose of studying the Probability Theory is to master the concepts of Random Experiments, Random Variables, Probability Spaces, Distribution Functions, Conditional Distributions and Stochastic Freedom, Mathematical Expectations, Moment Generation Functions, Characteristic Functions, distributions of discrete random variable functions, distributions of continuous random variable functions, as well as applications in statistical methods so that students will have a learning experience to think kristically and be able to give decisions which is appropriate about the use of the concept. The learning strategies used are discussions and exercises and tasks</p>	
Assessment and its weight	<p>Assignment &amp; Test I – 20%</p> <p>Midterm Exam – 30%</p> <p>Assignment &amp; Test II – 20%</p> <p>Final Exam– 30%</p>	
Media employed	<p>LCD, whiteboard, websites (myITS Classroom), zoom</p>	
Reading list	<ol style="list-style-type: none"> <li>1. Hogg, R.V. dan Craig, A.T. 1995. Introduction to Mathematical Statistics, 5th ed. Mac Millon. New York.</li> <li>2. Mood, A.M., Graybill, F.A. dan Boes, D.C. 1974. Introduction of the Theory of Statistics. 4th ed. Mc-Graw Hill. Tokyo.</li> <li>3. Rohatgi, W.K., 1976., An Introduction to Probability Theory and Mathematical Statistics, John Wiley and Sons, New York.</li> <li>4. Salas SL, Hille e, (1982)., "Calculus of One and Several Variables", 4th ed, Jhon Wiley, New York.,</li> <li>5. Bartoszynski, R. and Bugaj, M.N., 1996, Probability and Statistical Inference, John Wiley &amp; Sons, New York.</li> <li>6. Bhat, B.R., 1981, Modern Probability Theory, John Wiley &amp; Sons, New York</li> </ol>	

	<b>INSTITUT TEKNOLOGI SEPULUH NOPEMBER</b> <b>FAKULTAS SAINS DAN ANALITIKA DATA</b> <b>PROGRAM STUDI SARJANA STATISTIKA</b> <b>DEPARTEMEN STATISTIKA</b>					Kode Dokumen
	<b>RENCANA PEMBELAJARAN SEMESTER/</b> <b>SEMESTER LEARNING PLAN</b>					
<b>MATA KULIAH (MK)/</b> <i>Course</i>	<b>KODE/</b> <i>Code</i>	<b>Rumpun MK/</b> <i>Course Group</i>	<b>BOBOT</b> <i>(sks)/</i> <i>Weight</i> <i>(credit)</i>		<b>SEMESTER/</b> <i>Semester</i>	<b>Tgl Penyusunan/</b> <i>Drafting Date</i>
<b>PENGANTAR TEORI PELUANG /</b> <i>INTRODUCTION TO PROBABILITY THEORY</i>	SS234207	SOSPEN	<b>T=4</b>	<b>P=0</b>	II	17 Desember 2022
<b>OTORISASI/</b> <i>AUTHORIZATION</i>	<b>Pengembang RPS/</b> <i>RPS Developer</i>		<b>Koordinator RMK/</b> <i>Course Group Coordinator</i>		<b>Ketua PRODI/</b> <i>Head of Department</i>	
	Prof. Dr. Drs. I Nyoman Budiantara, M.Si; Dr. Drs. Purhadi, M.Sc		Prof. Dr. Drs. I Nyoman Budiantara, M.Si		Dr. Kartika Fithriasari, M.Si	
<b>Capaian Pembelajaran (CP)/</b> <i>Learning Achievement</i>	<b>CPL-PRODI yang dibebankan pada MK/</b> <i>PLO</i>					
	CPL-4	Mampu menerapkan sains dan Matematika untuk mendukung pemahaman metode statistika				
	CPL-5	Mampu menerapkan teori statistika pada metode statistika				
	<i>PLO-4</i>	<i>Able to apply science and mathematics to support the understanding of statistical methods</i>				
	<i>PLO-5</i>	<i>Able to apply statistical theory to statistical methods</i>				
	<b>Capaian Pembelajaran Mata Kuliah (CPMK)/</b> <i>CLO</i>					
	CPMK.1 Menguasai konsep percobaan random, variabel random, ruang probabilitas, fungsi distribusi, distribusi bersyarat dan kebebasan stokastik, ekspektasi matematika, fungsi pembangkit momen, fungsi karakteristik, distribusi dari fungsi variabel random diskrit, distribusi dari fungsi variabel random kontinu,					
	CPMK.2 Dapat memformulasikan permasalahan percobaan random, variabel random, ruang probabilitas, fungsi distribusi, distribusi bersyarat dan kebebasan stokastik, ekspektasi matematika, fungsi pembangkit momen, fungsi karakteristik, distribusi dari fungsi variabel random diskrit, distribusi dari fungsi variabel random kontinu					
	CPMK.3 Dapat memilih metode penentuan momen ke-k, distribusi dari fungsi variabel random diskrit, distribusi dari fungsi variabel random kontinu, serta					

	<p>mampu beradaptasi terhadap masalah probabilitas, model-model probabilitas</p> <p>CPMK.4 Dapat memformulasikan permasalahan percobaan random, variabel random, ruang probabilitas, fungsi distribusi, distribusi bersyarat dan kebebasan stokastik, ekspektasi matematika, fungsi pembangkit momen, fungsi karakteristik, distribusi dari fungsi variabel random diskrit, distribusi dari fungsi variabel random kontinu</p> <p><i>CLO.1 Mastering the concepts of random experiments, random variables, probability spaces, distribution functions, conditional distributions and stochastic freedom, mathematical expectations, moment generation functions, characteristic functions, distributions of discrete random variable functions, distributions of random variable functions kontinu,</i></p> <p><i>CLO.2 Can formulate problems of random experiments, random variables, probability spaces, distribution functions, conditional distributions and stochastic freedoms, mathematical expectations, moment-generating functions, characteristic functions, distributions of discrete random variable functions, distributions of continuous random variable functions</i></p> <p><i>CLO.3 Can choose the method of determining the k-th moment, the distribution of the discrete random variable function, the distribution of the kontinu random variable function, and be able to adapt to probability problems, probability models</i></p> <p><i>CLO.4 Can formulate problems of random experiments, random variables, probability spaces, distribution functions, conditional distributions and stochastic freedom, mathematical expectations, moment-generat</i></p>															
	<p><b>Matrik CPL – CPMK</b> <i>PLO-CLO Matrix</i></p> <table border="1"> <tr> <td>CPMK/<i>CLO</i></td> <td>PLO-4</td> <td>PLO-5</td> </tr> <tr> <td>CPMK-1/<i>CLO-1</i></td> <td>V</td> <td>V</td> </tr> <tr> <td>CPMK-2/<i>CLO-2</i></td> <td>V</td> <td>V</td> </tr> <tr> <td>CPMK-3/<i>CLO-3</i></td> <td>V</td> <td>V</td> </tr> <tr> <td>CPMK-4/<i>CLO-4</i></td> <td>V</td> <td>V</td> </tr> </table>	CPMK/ <i>CLO</i>	PLO-4	PLO-5	CPMK-1/ <i>CLO-1</i>	V	V	CPMK-2/ <i>CLO-2</i>	V	V	CPMK-3/ <i>CLO-3</i>	V	V	CPMK-4/ <i>CLO-4</i>	V	V
CPMK/ <i>CLO</i>	PLO-4	PLO-5														
CPMK-1/ <i>CLO-1</i>	V	V														
CPMK-2/ <i>CLO-2</i>	V	V														
CPMK-3/ <i>CLO-3</i>	V	V														
CPMK-4/ <i>CLO-4</i>	V	V														
<p><b>Deskripsi Singkat MK/ Course Description</b></p>	<p>Teori Peluang merupakan salah satu matakuliah dasar yang merupakan bagian dari bidang kajian dalam teori statistik. Tujuan mempelajari Teori Peluang adalah untuk menguasai konsep Percobaan Random, Variabel Random, Ruang Probabilitas, Fungsi Distribusi, Distribusi Bersyarat dan Kebebasan Stokastik, Ekspektasi Matematika, Fungsi Pembangkit Momen, Fungsi Karakteristik, distribusi dari fungsi variabel random diskrit, distribusi dari fungsi variabel random kontinu, serta aplikasi dalam metode statistika sehingga mahasiswa akan memiliki pengalaman belajar untuk berfikir secara kritis dan mampu memberikan keputusan yang tepat tentang penggunaan konsep tersebut. Strategi pembelajaran yang digunakan adalah diskusi dan latihan serta tugas.</p> <p><i>Probability Theory is one of the basic courses that is part of the field of study in statistical theory. The purpose of studying the Probability Theory is to master the concepts of Random Experiments, Random Variables, Probability Spaces, Distribution Functions, Conditional Distributions and Stochastic Freedom, Mathematical Expectations, Moment Generation Functions, Characteristic Functions, distributions</i></p>															

	<p><i>of discrete random variable functions, distributions of continuous random variable functions, as well as applications in statistical methods</i></p> <p><i>so that students will have a learning experience to think critically and be able to give decisions which is appropriate about the use of the concept. The learning strategies used are discussions and exercises and tasks</i></p>				
<b>Bahan Kajian: Materi Pembelajaran/ Course Material</b>	<p>Dasar Sains, Teori Statistika <i>Basic Science, Statistical Theory</i></p>				
<b>Pustaka/ References</b>	<b>Utama/Primary:</b>				
	1. Hogg, R.V. dan Craig, A.T. 1995. Introduction to Mathematical Statistics, 5th ed. Mac Millan. New York.				
	<b>Pendukung/Secondary:</b>				
	<p>1. Mood, A.M., Graybill, F.A. dan Boes, D.C. 1974. Introduction of the Theory of Statistics. 4th ed. Mc-Graw Hill. Tokyo.</p> <p>2. Rohatgi, W.K., 1976., An Introduction to Probability Theory and Mathematical Statistics, John Wiley and Sons, New York.</p> <p>3. Salas SL, Hille e, (1982)., "Calculus of One and Several Variables", 4th ed, John Wiley, New York.,</p> <p>4. Bartoszynski, R. and Bugaj, M.N., 1996, Probability and Statistical Inference, John Wiley &amp; Sons, New York.</p> <p>5. Bhat, B.R., 1981, Modern Probability Theory, John Wiley &amp; Sons, New York</p>				
<b>Dosen Pengampu/ Lecturers</b>	Prof. Dr. Drs. I Nyoman Budiantara, M.Si; Dr. Drs. Purhadi, M.Sc				
<b>Matakuliah syarat/ Pre-requisite Course</b>	-				
<b>Mg Ke- Week</b>	<b>Kemampuan akhir tiap tahapan belajar (Sub-CPMK) Final capability</b>	<b>Penilaian Evaluation</b>	<b>Bantuan Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu] Learning Format</b>	<b>Materi Pembelajaran [Pustaka] Learning Material [References]</b>	<b>Bobot Penilaian (%) Evaluation Weight (%)</b>

	<i>for each learning step</i>			<i>Learning Methods Assignment for Student [Estimated Time]</i>			
		<b>Indikator Indicator</b>	<b>Kriteria &amp; Bentuk Criteria and Format</b>	<b>Luring Offline</b>	<b>Daring Online</b>		
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>
<b>1</b>	<p>Mampu menjelaskan konsep percobaan random, ruang sampel dan Event/peristiwa, field dan <math>\sigma</math> - field beserta sifat dan perannya dalam Statistika inferensial</p> <p><i>Able to explain the concept of random experiments, sample space and events / events, fields and <math>\sigma</math>- fields along with nature and its role in inferential statistics</i></p>	<p>a. Mampu menjelaskan dan memberi contoh tentang Himpunan dan sifat-sifatnya,</p> <p>b. Mampu Menjelaskan tentang percobaan random, titik sampel, ruang sampel, Event/peristiwa.</p> <p>c. Mampu menghasilkan Field, minimal Field, <math>\sigma</math>-Field, Borel</p> <p>Field dari berbagai peristiwa</p> <p>d. Mampumenjelaskan sifat –sifat field dan <math>\sigma</math> -Field beserta perbedaannya.</p> <p>e. Mampume mberikan contoh riil tentang Field dan <math>\sigma</math> -Field</p> <p>percobaan random, ruang sampel dan Event/ peristiwa</p> <p>a. <i>Able to explain and exemplify the Set and its properties</i></p> <p>b. <i>Able to Explain about random experiments, sample points, sample rooms, events / events.</i></p> <p>c. <i>Able to produce Field, minimum Field, <math>\sigma</math>-Field,</i></p>	<p>Tes Tulis. Tugas 1, Observasi di kelas</p> <p><i>Written test. Task 1, Classroom observation</i></p>	<p>Ceramah, diskusi dan latihan soal</p> <p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>	<p>Himpunan, Percobaan random, ruang sampel dan Event/ Peristiwa. Field dan <math>\sigma</math>- Field</p> <p><i>Sets, Random experiments, sample rooms and Events. Field and <math>\sigma</math>-Field</i></p>	8%	



		<p><i>Borel Fields of various events</i></p> <p>d. <i>Able to explain the properties of fields and <math>\sigma</math>-Fields along with differences</i></p> <p>e. <i>Able to give real examples of Field and <math>\sigma</math>-Field random experiments sample space and Events/events</i></p>				
2-3	<p>Mampu menjelaskan definisi probabilitas aksiomatik berdasarkan konsep field beserta teorema-teorema yang dapat diturunkan dari definisi tersebut</p> <p><i>Able to explain the definition of axiomatic probability based on the concept of field along with theorems that can be derived from the definition</i></p>	<p>a. Mampu menerangkan, memberi contoh, menerangkan probabilitas aksiomatik.</p> <p>b. Mampu membedakan antara segitiga Pascal, binomial Newton dan menerapkan pada konsep probabilitas</p> <p>c. Mampu menurunkan teorema-teorema probabilitas, dan probabilitas bersyarat.</p> <p>d. Mampu menjelaskan sifat-sifat independensi. Mampu menjelaskan probabilitas total dan teorema Bayes</p> <p><i>a. Able to explain, give examples, and define axiomatic probabilities.</i></p> <p><i>b. Able to distinguish between Pascal's triangle, Newton's binomial and apply to the concept of probability</i></p> <p><i>c. Able to derive the theorem probability theorem, and conditional probability.</i></p> <p><i>d. Able to explain the properties of independence. Able to explain total probability and Bayes' theorem</i></p>	<p>Tes Tulis, Tugas 2, Observasi di kelas</p> <p><i>Written test. Task 2, Classroom observation</i></p>	<p>Ceramah, diskusi dan latihan soal</p> <p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 3  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>	<p>Probabilitas : Fungsi himpunan, Definisi probabilitas aksiomatik dan teorema probabilitas, Probabilitas bersyarat Sifat independensi Probabilitas total dan Teorema Bayes</p> <p><i>Probability : Set function, Definition of axiomatic probability and probability theorem, Conditional probability Nature of independence Total probability and Bayes Theorem</i></p>	10%
3-4	Mampu	a. Dapat menerangkan dan	Tes Tulis,	Ceramah,	Variabel random: variabel random	10%

	<p>menjelaskan pengertian variabel random Diskrit dan Kontinu, serta sifat-sifatnya</p> <p><i>Able to explain the meaning of Discrete and Continuous random variables, as well as their properties</i></p>	<p>memberi contoh tentang fungsi titik, fungsi himpunan, variabel random dan sifat-sifatnya.</p> <p>b. Dapat menerangkan dan member contoh variabel random diskrit</p> <p>c. Dapat menerangkan dan memberi contoh variabel random kontinu</p> <p>d. Mampu menjelaskan perbedaan konsep variabel random diskrit dan kontinu</p> <p>a. <i>Can explain and give examples of point functions, set functions, random variables and their properties.</i></p> <p>b. <i>Can describe and sample discrete random variables</i></p> <p>c. <i>Can explain and give examples of continuous random variables</i></p> <p>d. <i>Able to explain the difference in the concept of discrete and continuous random variables</i></p>	<p>Tugas 3, Observasi di kelas</p> <p><i>Written test. Task 3, Classroom observation</i></p>	<p>diskusi dan latihan soal</p> <p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 3  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>	<p>diskrit, Variabel random kontinu</p> <p><i>Random variables: discrete random variables, continuous random variables</i></p>	
5	<p>Mampu menjelaskan konsep ruang probabilitas, Probabilitas bersyarat dan sifat-sifatnya</p> <p><i>Able to explain the concept of probability space, Conditional probability and its properties</i></p>	<p>a. Dapat menerangkan, memberi contoh ruang probabilitas.</p> <p>b. Dapat menerangkan, dan memberi contoh probabilitas bersyarat.</p> <p>c. Dapat menerangkan, dan memberi contoh Probabilitas Total dan teorema Bayes.</p> <p>a. <i>Can explain, give an example of probability space.</i></p> <p>b. <i>Can explain, and give examples of conditional probabilities.</i></p> <p>c. <i>Can explain, and exemplify Total Probability and Bayes' theorem</i></p>	<p>Tes Tulis, Tugas 4, Observasi di kelas</p> <p><i>Written test. Task 4, Classroom observation</i></p>	<p>Ceramah, diskusi dan latihan soal</p> <p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>	<p>Ruang probabilitas, Probabilitas bersyarat, Teorema Bayes dan kebebasan stokastik</p> <p><i>Probability space, Conditional probability, Bayes Theorem and stochastic freedom</i></p>	7%

6	<p>Mampu menjelaskan konsep Distribusi Probabilitas Diskrit beserta sifat-sifatnya</p> <p><i>Able to explain the concept of Discrete Probability Distribution and its properties</i></p>	<p>a. Mampu menjelaskan distribusi variabel random diskrit</p> <p>b. Mampu menentukan fungsi distribusi Binomial, Geometrik, Hipergeometrik, Binomial negative</p> <p>c. Mampu menentukan fungsi distribusi Poisson, Multinomial, Uniform diskrit</p> <p><i>a. Able to explain the distribution of discrete random variables</i></p> <p><i>b. Able to determine Binomial, Geometric, Hypergeometric, Binomial negative distribution functions</i></p> <p><i>c. Able to determine the distribution function of Poisson, Multinomial, Uniform discrete</i></p>	<p>Tes Tulis, Tugas 5, Observasi di kelas</p> <p><i>Written test. Task 5, Classroom observation</i></p>	<p>Ceramah, diskusi dan latihan soal</p> <p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>		<p>Distribusi variabel random diskrit dan sifat-sifatnya</p> <p><i>Discrete distribution of random variables and their properties</i></p>	7%
7	<p>Mampu menjelaskan konsep Distribusi Probabilitas kontinu beserta sifat-sifatnya</p> <p><i>Able to explain the concept of continuous Probability Distribution and its properties</i></p>	<p>a. Mampu menjelaskan perbedaan distribusi variabel random diskrit dan kontinu</p> <p>b. Mampu menentukan fungsi distribusi Normal, Uniform, Gamma, Eksponensial, Normal, normal bivariat, beta, weibull</p> <p><i>a. Able to explain the difference in the distribution of discrete and continuous random variables</i></p> <p><i>b. Able to determine the distribution function of Normal, Uniform, Gamma, Exponential, Normal, normal bivariate, beta, weibull</i></p>	<p>Tes Tulis, Tugas 6, Observasi di kelas</p> <p><i>Written test. Task 6, Classroom observation</i></p>	<p>Ceramah, diskusi dan latihan soal</p> <p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>		<p>Distribusi variabel random kontinu dan sifat-sifatnya</p> <p><i>Distribution of continuous random variables and their properties</i></p>	8%
8	<b>ETS/Midterm</b>						
9-10	<p>Mampu menjelaskan konsep ekspektasi matematika,</p>	<p>a. Mampu menjelaskan pengertian konsep ekspektasi matematika, momen dan variansi dan sifat-sifatnya.</p>	<p>Tes Tulis, Tugas 6, Observasi di kelas</p>	<p>Ceramah, diskusi dan latihan soal</p>		<p>Ekspektasi , momen dan variansi dari variabel random diskrit dan kontinu dan sifat-sifatnya</p>	15%

	<p>momen, variansi beserta sifat-sifatnya dan ketaksamaan Chebyshev</p> <p><i>Able to explain the concept of expectations mathematics, moments, variance and their properties and Chebyshev's ineptitude</i></p>	<p>b. Mampu mengetahui kegunaan dan hubungan dari fungsi pembangkit momen dengan mean, momen, dan variansi</p> <p>c. Mampu mendapatkan fungsi pembangkit momen, mean, momen, variansi untuk variabel random diskrit</p> <p>d. Mampu menjelaskan kegunaan dan hubungan dari fungsi pembangkit momen, mean, momen, variansi untuk variabel random kontinu</p> <p><i>a. Able to explain the notion of the concept of mathematical expectations, moments and variations and their properties.</i></p> <p><i>b. Able to know the usefulness and relationship of the moment generation function with the mean, moment, and variance</i></p> <p><i>c. Able to obtain the function of generating moments, mean, moments, variances for discrete random variables</i></p> <p><i>d. Able to explain the usefulness and relationship of the function of generating moments, mean, moment, variance for continuous random variables</i></p>	<p><i>Written test. Task 6, Classroom observation</i></p>	<p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 3  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 4  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>	<p><i>Expectations , moments and variances of discrete and continuous random variables and their properties</i></p>	
11-12	<p>Mampu menjelaskan konsep konvergensi barisan variabel random</p> <p><i>Able to explain the concept of</i></p>	<p>a. Dapat menerangkan dan mendemonstrasikan Konvergensi dalam probabilitas.</p> <p>b. Dapat menerangkan dan mendemonstrasikan Konvergensi dalam distribusi.</p> <p>c. Dapat menerangkan dan mendemonstrasikan Konvergensi almost surely.</p>	<p>Tes Tulis, Tugas 7, Observasi di kelas</p> <p><i>Written test. Task 7, Classroom observation</i></p>	<p>Ceramah, diskusi dan latihan soal</p> <p><i>Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1</p>	<p>Konvergensi dalam probabilitas, Konvergensi almost surely, Konvergensi dalam distribusi dan CLT</p> <p><i>Convergence in probability, Convergence almost surely, Convergence in distribution and CLT</i></p>	10%

	<i>convergence of rows of random variables</i>	<p>d. Dapat menerangkan dan mendemonstrasikan Konsep tentang CLT.</p> <p>a. <i>Can explain and demonstrate Convergence in probability.</i></p> <p>b. <i>Can explain and demonstrate Convergence in distribution.</i></p> <p>c. <i>Can explain and demonstrate Convergence almost surely.</i></p> <p>d. <i>Can explain and demonstrate the Concept of CLT</i></p>		<p>TM: 1x2x50" LT: 1x2x60" BM: 1x2x60"</p> <p>Pertemuan - 2 TM: 1x2x50" LT: 1x2x60" BM: 1x2x60"</p> <p>Pertemuan - 3 TM: 1x2x50" LT: 1x2x60" BM: 1x2x60"</p> <p>Pertemuan - 4 TM: 1x2x50" LT: 1x2x60" BM: 1x2x60"</p>			
13-14	<p>Mampu menentukan distribusi dari variabel random diskrit</p> <p><i>Able to determine the distribution of discrete random variables</i></p>	<p>a. Mampu menjelaskan tentang distribusi dari variabel random diskrit.</p> <p>b. Mampu menentukan distribusi dari Variabel random diskrit.</p> <p>c. Mengetahui kelebihan dan kekurangan dari metode penentuan distribusi fungsi variabel random diskrit</p> <p>a. <i>Able to explain the distribution of discrete random variables.</i></p> <p>b. <i>Able to determine the distribution of discrete random Variables.</i></p> <p>c. <i>Knowing the advantages and disadvantages of the method of determining the distribution of discrete random variable functions</i></p>	<p>Tes Tulis, Tugas 8, Observasi di kelas</p> <p><i>Written test. Task 8, Classroom observation</i></p>	<p>Ceramah Interaktif, Diskusi, Latihan Soal <i>Interactive Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1 TM: 1x2x50" LT: 1x2x60" BM: 1x2x60"</p> <p>Pertemuan - 2 TM: 1x2x50" LT: 1x2x60" BM: 1x2x60"</p> <p>Pertemuan - 3 TM: 1x2x50" LT: 1x2x60" BM: 1x2x60"</p>		<p>Distribusi dari fungsi variabel random diskrit</p> <p><i>Distribution of discrete random variable functions</i></p>	13%
14-15	Mampu menentukan	<p>a. Mampu menjelaskan tentang distribusi dari variabel random</p>	Tes Tulis, Tugas 8,	Ceramah Interaktif,		Distribusi dari fungsi variabel random kontinyu	12%

	<p>distribusi dari variabel random kontinyu</p> <p><i>Able to determine the distribution of continuous random variables</i></p>	<p>kontinyu.</p> <p>b. Mampu menentukan distribusi dari Variabel random kontinyu.</p> <p>c. Mengetahui kelebihan dan kekurangan dari metode penentuan distribusi fungsi variabel random kontinyu</p> <p>a. <i>Able to explain the distribution of continuous random variables.</i></p> <p>b. <i>Able to determine the distribution of continuous random variables.</i></p> <p>c. <i>Knowing the advantages and disadvantages of the method of determining the distribution of the function of a continuous random variable</i></p>	<p>Observasi di kelas</p> <p><i>Written test. Task 8, Classroom observation</i></p>	<p>Diskusi, Latihan Soal</p> <p><i>Interactive Lectures, Discussions, and Exercises</i></p> <p>Pertemuan - 1  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 2  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p> <p>Pertemuan - 3  <b>TM: 1x2x50"</b>  <b>LT: 1x2x60"</b>  <b>BM: 1x2x60"</b></p>		<p><i>Distribution of continuous random variable functions</i></p>	
<b>16</b>	<b>Evaluasi Akhir Semester / Ujian Akhir Semester/<i>Final Exam</i></b>						

