

# MODULE HANDBOOK

## COMPUTATIONAL STATISTICS



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

## ENDORSEMENT PAGE



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COMPUTATIONAL STATISTICS  
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.rer.pol. Heri Kuswanto, M.Si	Dosen Lecturer		
Pemeriksa dan Pengendalian <i>Review and Control</i>	Prof. Dr.rer.pol. Heri Kuswanto, M.Si; Dr. Irhamah, M.Si	Tim kurikulum Curriculum team		
Persetujuan <i>Approval</i>	Prof. Nur Iriawan, MIKom., Ph.D	Koordinator RMK Course Cluster Coordinator		
Penetapan <i>Determination</i>	Dr. Kartika Fithriasari, M.Si	Kepala Departemen Head of Department		

# MODULE HANDBOOK

## COMPUTATIONAL STATISTICS

Module name	COMPUTATIONAL STATISTICS	
Module level	Undergraduate	
Code	SS234206	
Course (if applicable)	COMPUTATIONAL STATISTICS	
Semester	2	
Person responsible for the module	Prof. Dr.rer.pol. Heri Kuswanto, M.Si	
Lecturer	Prof. Dr.rer.pol. Heri Kuswanto, M.Si; Dr. Irhamah, M.Si	
Language	Bahasa Indonesia and English	
Relation to curriculum	Undergraduate degree program, mandatory, 2nd semester.	
Type of teaching, contact hours	Lectures, <50 student	
Workload	1. Lectures [L]: 3 x 50 = 150 minutes per week. 2. Practicum [P]: 1x170=170 minutes per week. 3. Exercises and Assignments [EA] : 3 x 60 = 180 minutes (3 hours) per week. 4. Independent learning [IL]: 3 x 60 = 180 minutes (3 hours) per week.	
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 Able to explain the structure of R and Python programming CLO.2 Be able to explain the basics of descriptive statistics program algorithms and implement them in the Statistics package program CLO.3 Be able to explain the basics of computational program algorithms for parameter estimation of one, two and k populations as well implement it in the Statistics package program CLO.4 Be able to explain the basic algorithms of linear and non-linear regression analysis computational programs as well as checking error assumptions and implement them in the Statistics package program	PLO-4  PLO-4 PLO-7  PLO-7 PLO-8

	<p>CLO.5 Able to understand basic program algorithms for computational bootstrap and jackknife regression and implement them in the Statistics package program</p> <p>CLO.6 Able to understand the basic random number generation algorithm and implement it in the Statistics package program</p> <p>CLO.7 Able to communicate effectively and work together in interdisciplinary and multidisciplinary teams</p>	
Content	<p>This course aims to equip students with R and Python programming skills and then formulate problem solving using the basics of computational algorithms for statistical methods. This course focuses on the role of computing as a fundamental tool in data analysis, statistical inference, and for the development of statistical theories and methods. The material is delivered through interactive lectures, discussions, exercises, practicums and Problem Based Learning (PBL).</p>	
Assessment and its weight	<p>Project 1(27%)  Cognitive - Midterm Exam (23%)  Assignment of programming (27%)  Cognitive - Final Exam(23%)</p>	
Media employed	<p>LCD, whiteboard, websites (myITS Classroom), zoom</p>	
Reading list	<ol style="list-style-type: none"> <li>1. Rizzo, M. L. 2017. Statistical Computing with R. Chapman dan Hall/ CRC Computer Science dan Data Analysis.</li> <li>2. Halswanger, T. 2022. An Introduction to Statistics with Python. Springer</li> <li>3. Manly, B. F. J. 1997. Randomization, Bootstrap and Monte Carlo Method in Biology. London : Chapman and Hall.</li> <li>4. Efron, B. and Tibshirani, R. J. 1993. An Introduction to the Bootstrap. Chapman and Hall, Inc.</li> </ol>	



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

Kode Dokumen

**RENCANA PEMBELAJARAN SEMESTER/**  
**SEMESTER LEARNING PLAN**

<b>MATA KULIAH (MK)/</b> <i>Course</i>	<b>KODE/</b> <i>Code</i>	<b>Rumpun MK/</b> <i>Course Group</i>	<b>BOBOT (sks)/</b> <i>Weight (credit)</i>		<b>SEMESTER/</b> <i>Semester</i>	<b>Tgl Penyusunan/</b> <i>Drafting Date</i>
<b>KOMPUTASI STATISTIKA/</b> <i>COMPUTATIONAL STATISTICS</i>	SS234206	SKSD	<b>T=</b>	<b>P=</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.rer.pol. Heri Kuswanto, M.Si		Prof. Nur Iriawan, M.Ikom, Ph.D		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-7	Mampu menggunakan perangkat komputasi modern untuk menyelesaikan permasalahan statistik				
	CPL-8	Mampu menggunakan teknik komputasi untuk menyelesaikan permasalahan statistik				
	<i>PLO-4</i>	<i>Able to apply science and mathematics to support the understanding of statistical methods</i>				
<i>PLO-7</i>	<i>Able to use modern computing devices to solve statistical problems</i>					
<i>PLO-8</i>	<i>Able to use computational techniques to solve statistical problems</i>					
	<b>Capaian Pembelajaran Mata Kuliah (CPMK)/</b> <i>CLO</i>					

	<p>CPMK.1 Mampu menjelaskan struktur pemrograman R dan Python</p> <p>CPMK.2 Mampu menjelaskan dasar-dasar algoritma program statistika deskriptif dan mengimplementasikannya dalam program paket Statistika</p> <p>CPMK.3 Mampu menjelaskan dasar-dasar algoritma program komputasi pendugaan parameter satu, dua dan k populasi serta mengimplementasikannya dalam program paket Statistika</p> <p>CPMK.4 Mampu menjelaskan dasar algoritma program komputasi analisis regresi linier dan non linier serta pemeriksaan asumsi error dan meng- implementasikannya dalam program paket Statistika</p> <p>CPMK.5 Mampu memahami dasar algoritma program untuk komputasi regresi bootstrap dan jacknife dan meng-implementasikannya dalam program paket Statistika</p> <p>CPMK.6 Mampu memahami dasar algoritma pembangkitan bilangan acak dan mengimplementasikannya dalam program paket Statistika</p> <p>CPMK.7 Mampu berkomunikasi secara efektif dan bekerjasama dalam tim yang interdisiplin dan multidisiplin</p> <p><i>CLO.1 Able to explain the structure of R and Python programming</i></p> <p><i>CLO.2 Be able to explain the basics of descriptive statistics program algorithms and implement them in the Statistics package program</i></p> <p><i>CLO.3 Be able to explain the basics of computational program algorithms for parameter estimation of one, two and k populations as well implement it in the Statistics package program</i></p> <p><i>CLO.4 Be able to explain the basic algorithms of linear and non-linear regression analysis computational programs as well as checking error assumptions and implement them in the Statistics package program</i></p> <p><i>CLO.5 Able to understand basic program algorithms for computational bootstrap and jacknife regression and implement them in the Statistics package program</i></p> <p><i>CLO.6 Able to understand the basic random number generation algorithm and implement it in the Statistics package program</i></p> <p><i>CLO.7 Able to communicate effectively and work together in interdisciplinary and multidisciplinary teams</i></p>																																
	<p><b>Matrik CPL – CPMK</b></p> <p><i>PLO-CLO Matrix</i></p> <table border="1" data-bbox="616 954 1713 1254"> <thead> <tr> <th>CPMK/<i>CLO</i></th> <th>PLO-4</th> <th>PLO-7</th> <th>PLO-8</th> </tr> </thead> <tbody> <tr> <td>CPMK-1/<i>CLO-1</i></td> <td>V</td> <td></td> <td></td> </tr> <tr> <td>CPMK-2/<i>CLO-2</i></td> <td>V</td> <td>V</td> <td></td> </tr> <tr> <td>CPMK-3/<i>CLO-3</i></td> <td></td> <td>V</td> <td>V</td> </tr> <tr> <td>CPMK-4/<i>CLO-4</i></td> <td></td> <td>V</td> <td>V</td> </tr> <tr> <td>CPMK-5/<i>CLO-5</i></td> <td></td> <td>V</td> <td>V</td> </tr> <tr> <td>CPMK-6/<i>CLO-6</i></td> <td></td> <td>V</td> <td>V</td> </tr> <tr> <td>CPMK-7/<i>CLO-7</i></td> <td></td> <td>V</td> <td>V</td> </tr> </tbody> </table>	CPMK/ <i>CLO</i>	PLO-4	PLO-7	PLO-8	CPMK-1/ <i>CLO-1</i>	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-5/ <i>CLO-5</i>		V	V	CPMK-6/ <i>CLO-6</i>		V	V	CPMK-7/ <i>CLO-7</i>		V	V
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CPMK-7/ <i>CLO-7</i>		V	V																														
<p><b>Deskripsi Singkat MK/<i>Course Description</i></b></p>	<p>Mata kuliah ini bertujuan untuk membekali mahasiswa dengan kemampuan pemrograman R dan Python kemudian memformulasikan penyelesaian masalah menggunakan dasar-dasar algoritma komputasi untuk metode Statistika. Mata kuliah ini menitik-beratkan pada peranan komputasi sebagai alat fundamental dalam analisis data, inferensia secara statistika, dan untuk pengembangan teori dan metode statistika. Materi disampaikan melalui ceramah interaktif, diskusi,</p>																																

	<p>latihan, praktikum serta Problem Based Learning.</p> <p><i>This course aims to equip students with R and Python programming skills and then formulate problem solving using the basics of computational algorithms for statistical methods. This course focuses on the role of computing as a fundamental tool in data analysis, statistical inference, and for the development of statistical theories and methods. The material is delivered through interactive lectures, discussions, exercises, practicums and Problem Based Learning (PBL).</i></p>				
<b>Bahan Kajian: Materi Pembelajaran/ Course Material</b>	<p>Dasar Sains, Teori Statistika, Pengumpulan Data, Deskripsi dan Eksplorasi, Komputasi dan Data Processing, Pemodelan, Industri dan Bisnis, Pemerintahan dan Kependudukan, Ekonomi dan Manajemen, Kesehatan dan Lingkungan</p> <p><i>Basic Science, Statistical Theory, Data Collection, Description and Exploration, Computing and Data Processing, Modeling, Industry and Business, Government and Population, Economics and Management, Health and Environment</i></p>				
<b>Pustaka/ References</b>	<p><b>Utama/Primary:</b></p> <p>5. Rizzo, M. L. 2017. Statistical Computing with R. Chapman dan Hall/ CRC Computer Science dan Data Analysis. 6. Halswanger, T. 2022. An Introduction to Statistics with Python. Springer</p> <p><b>Pendukung/Secondary:</b></p> <p>1. Manly, B. F. J. 1997. Randomization, Bootstrap and Monte Carlo Method in Biology. London : Chapman and Hall. 2. Efron, B. and Tibshirani, R. J. 1993. An Introduction to the Bootstrap. Chapman and Hall, Inc.</p>				
<b>Dosen Pengampu/ Lecturers</b>	<p>Prof. Dr.rer.pol. Heri Kuswanto, M.Si; Dr. Irhamah, M.Si</p>				
<b>Matakuliah syarat/ Pre-requisite Course</b>					
<b>Mg Ke- Week</b>	<b>Kemampuan akhir tiap tahapan belajar (Sub-CPMK) Final capability for each learning step</b>	<b>Penilaian Evaluation</b>	<b>Bantuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu] Learning Format Learning Methods</b>	<b>Materi Pembelajaran [Pustaka] Learning Material [References]</b>	<b>Bobot Penilaian (%) Evaluation Weight (%)</b>

				Assignment for Student [Estimated Time]			
		Indikator <i>Indicator</i>	Kriteria & Bentuk <i>Criteria and Format</i>	Luring <i>Offline</i>	Daring <i>Online</i>		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Mampu menjelaskan struktur pemrograman R  <i>Able to explain R programming structure</i>	1.1 Mampu membaca data dari berbagai tipe file 1.2 Dapat menjelaskan struktur pemrograman R  <i>1.1 Able to read data from various file types 1.2 Can explain the programming structure of R</i>	Tugas, Observasi di kelas  <i>Task, Observation in class</i>	Ceramah Interaktif, Diskusi, Latihan Soal Praktikum  Untuk praktikum M1, dimasukkan ke BM dan penugasan terstruktur  <i>Interactive Lectures, Discussions, Exercises Practice</i>  <i>For M1 practicum, it is entered into BM and structured assignments</i>		Pengantar Pemrograman R - Menjalankan R - Struktur data R - Membaca data - Manajemen data  <i>Introduction to R Programming</i> - <i>Running R</i> - <i>R data structure</i> - <i>Read data</i> - <i>Data management</i>	5%



				TM: 3x50" LT: 3x60" BM: 3x60"			
2	Mampu memanfaatkan R untuk perhitungan statistika dasar  <i>Able to utilize R for basic statistical calculations</i>						
2	Mampu menjelaskan dasar-dasar algoritma program statistika deskriptif dan mengimplementasikannya dalam program paket Statistika  <i>Able to explain the basics of descriptive statistics program algorithms and implement them in the Statistics package program</i>	Mampu membuat program untuk komputasi statistika deskriptif menggunakan program R  <i>Able to create programs for descriptive statistical computing using R programs</i>	Tugas, Observasi di kelas Tes Presentasi Makalah  <i>Task, Observation in class Test Presentation Paper</i>	Ceramah Interaktif, Diskusi, PBL Praktikum  <i>Interactive Lectures, Discussions, PBL Practice</i>  TM: 3x50" LT: 3x60" BM: 3x60"		Komputasi Statistika Deskriptif menggunakan R, antara lain: - kovarian/ korelasi - determinan  <i>Descriptive Statistical Computing using R:</i> - Covariance / correlation - Determinants	10%
3-4	Mampu menjelaskan dasar-dasar algoritma program komputasi pendugaan parameter satu, dua dan k populasi serta mengimplementasi kannya dalam program paket Statistika  <i>Able to explain the basics of computational program algorithms estimating parameters one, two and k populations as well as implementing them in the Statistics package program</i>	Mampu membuat program untuk komputasi pendugaan dan pengujian parameter satu, dua dan k populasi menggunakan R  <i>Able to create programs for computational estimation and testing of parameters one, two and k population using R</i>	Tugas, Observasi di kelas Tes Presentasi Makalah  <i>Task, Observation in class Test Presentation Paper</i>	Ceramah Interaktif, Diskusi, PBL Praktikum  <i>Interactive Lectures, Discussions, PBL Practice</i>  TM: 2x3x50" LT: 2x3x60" BM: 2x3x60"		Komputasi Pendugaan dan Pengujian Parameter Satu, Dua dan k Populasi menggunakan R  <i>Computational Estimation and Testing of Parameters One, Two and k Populations using R</i>	10%

5-6	<p>Mampu menjelaskan dasar algoritma program komputasi analisis regresi linier dan non linier serta pemeriksaan asumsi error dan mengimplementasikan dalam program paket Statistika</p> <p><i>Able to explain the basic algorithms of linear and non-linear regression analysis computing programs as well as check error assumptions and implement them in the Statistics package program</i></p>	<p>Mampu membuat program untuk komputasi analisis regresi linear dan non linier serta pemeriksaan asumsi error menggunakan R</p> <p><i>Able to create programs for computational analysis of linear and non linier regression as well as error assumption checks using R</i></p>	<p>Tugas, Observasi di kelas Tes Presentasi Makalah</p> <p><i>Task, Observation in class Test Presentation Paper</i></p>	<p>Ceramah Interaktif, PBL Praktikum</p> <p><i>Interactive Lectures, Discussions, PBL Practice</i></p> <p><b>TM: 2x3x50"</b> <b>LT: 2x3x60"</b> <b>BM: 2x3x60"</b></p>	<p>Komputasi analisis regresi linear dan nonlinear serta pemeriksaan asumsi error menggunakan R</p> <p><i>Computational linear and non-linear regression analysis and error assumption checking using R</i></p>	12,5%	
7	<p>Mampu memahami dasar algoritma program untuk komputasi regresi bootstrap dan jackknife dan mengimplementasikannya dalam program paket Statistika</p> <p><i>Able to understand the basic algorithms of programs for bootstrap and jackknife regression computing and implement them in the Statistics package program</i></p>	<p>Mampu membuat program untuk komputasi regresi bootstrap dan jackknife menggunakan R</p> <p><i>Able to create programs for bootstrap and jackknife regression computing using R</i></p>	<p>Tugas, Observasi di kelas Tes</p> <p><i>Task, Observation in class Test</i></p>	<p>Ceramah Interaktif, PBL Praktikum</p> <p><i>Interactive Lectures, Discussions, PBL Practice</i></p> <p><b>TM: 3x50"</b> <b>LT: 3x60"</b> <b>BM: 3x60"</b></p>	<p>Komputasi Regresi bootstrap dan jackknife:</p> <ul style="list-style-type: none"> <li>- Berbasis pengamatan</li> <li>- Berbasis residual menggunakan R</li> </ul> <p><i>Bootstrap and jackknife Regression Computing:</i></p> <ul style="list-style-type: none"> <li>- <i>Observation-based</i></li> <li>- <i>Residual-based using R</i></li> </ul>	12,5%	
8	<b>ETS/Midterm</b>						
9	<p>Mampu menjelaskan dasar- dasar algoritma program statistika deskriptif dan mengimplementasikannya dalam program paket</p>	<p>Mampu membuat program untuk komputasi statistika deskriptif menggunakan python</p> <p><i>Able to make programs for</i></p>	<p>Tugas, Observasi di kelas Tes Presentasi Makalah</p>	<p>Ceramah Interaktif, PBL Praktikum</p> <p><i>Interactive</i></p>	<p>Komputasi Statistika Deskriptif menggunakan python:</p> <ul style="list-style-type: none"> <li>- kovarian/ korelasi</li> <li>- determinan</li> </ul>	10%	

	<p>Statistika</p> <p><i>Able to explain the basics of descriptive statistics program algorithms and implement them in the Statistics package program</i></p>	<p><i>descriptive statistical computing using python</i></p>	<p><i>Task, Observation in class Test Presentation Paper</i></p>	<p><i>Lectures, Discussions, PBL Practice</i></p> <p><b>TM: 3x50"</b> <b>LT: 3x60"</b> <b>BM: 3x60"</b></p>		<p><i>Computing Descriptive Statistics using python:</i></p> <ul style="list-style-type: none"> <li>- covariance/correlation</li> <li>- determinants</li> </ul>	
<b>10-11</b>	<p>Mampu menjelaskan dasar-dasar algoritma program komputasi pendugaan parameter satu, dua dan k populasi serta mengimplementasikannya dalam program paket Statistika</p> <p><i>Able to explain the basics of computational program algorithms estimating parameters one, two and k populations and implement them in the Statistics package program</i></p>	<p>Mampu membuat program untuk komputasi pendugaan dan pengujian parameter satu, dua dan k populasi menggunakan python</p> <p><i>Able to write programs for computational estimation and testing of one, two and k population parameters using python</i></p>	<p>Tugas, Observasi di kelas Tes Presentasi Makalah</p> <p><i>Task, Observation in class Test Presentation Paper</i></p>	<p>Ceramah Interaktif, PBL Praktikum</p> <p><i>Interactive Lectures, Discussions, PBL Practice</i></p> <p><b>TM: 2x3x50"</b> <b>LT: 2x3x60"</b> <b>BM: 2x3x60"</b></p>		<p>Komputasi Pendugaan dan Pengujian Parameter Satu, Dua dan k Populasi menggunakan python.</p> <p><i>Computational Estimation and Testing of Parameters One, Two and k Populations using python.</i></p>	10%
<b>12-13</b>	<p>Mampu menjelaskan dasar algoritma program komputasi analisis regresi linier dan non linier serta pemeriksaan asumsi error dan mengimplementasikan dalam program paket Statistika</p> <p><i>Able to explain the basic algorithms of linear and non-linear regression analysis computing programs as well as check error assumptions and implement them in the</i></p>	<p>Mampu membuat program untuk komputasi analisis regresi linear dan non linier serta pemeriksaan asumsi error menggunakan python</p> <p><i>Able to make programs for computing linear and non-linear regression analysis as well as checking error assumptions using python</i></p>	<p>Tugas, Observasi di kelas Tes Presentasi Makalah</p> <p><i>Task, Observation in class Test Presentation Paper</i></p>	<p>Ceramah Interaktif, PBL Praktikum</p> <p><i>Interactive Lectures, Discussions, PBL Practice</i></p> <p><b>TM: 2x3x50"</b> <b>LT: 2x3x60"</b> <b>BM: 2x3x60"</b></p>		<p>Komputasi analisis regresi linear dan nonlinear serta pemeriksaan asumsi error menggunakan macro python</p> <p><i>Computational regression analysis linear and nonlinear as well error assumption check using macros python</i></p>	10%

	<i>Statistics package program</i>						
14	<p>Mampu memahami dasar algoritma program untuk komputasi regresi bootstrap dan jackknife dan mengimplementasikannya dalam program paket Statistika</p> <p><i>Able to understand the basic algorithms of programs for bootstrap and jackknife regression computing and implement them in the Statistics package program</i></p>	<p>Mampu membuat program untuk komputasi regresi bootstrap dan jackknife menggunakan python</p> <p><i>Able to write programs for bootstrap and jackknife regression computing using python</i></p>	<p>Tugas, Observasi di kelas Tes Presentasi Makalah</p> <p><i>Task, Observation in class Test Presentation Paper</i></p>	<p>Ceramah Interaktif, PBL Praktikum</p> <p><i>Interactive Lectures, Discussions, PBL Practice</i></p> <p><b>TM: 3x50"</b> <b>LT: 3x60"</b> <b>BM: 3x60"</b></p>		<p>Komputasi Regresi bootstrap dan jackknife:</p> <ul style="list-style-type: none"> <li>- Berbasis pengamatan</li> <li>- Berbasis residual menggunakan python</li> </ul> <p><i>Regression computation bootstrap and jackknife:</i></p> <ul style="list-style-type: none"> <li>- <i>Observation based</i></li> <li>- <i>Residual based using python</i></li> </ul>	10%
15	<p>Mampu memahami dasar algoritma pembangkitan bilangan acak dan mengimplementasikan dalam program paket Statistika</p> <p><i>Able to understand the basis of random number generation algorithms and implement them in the Statistics package program</i></p>	<p>a. Mampu menjelaskan algoritma pembangkitan bilangan acak dan mengimplementasikannya dalam program R dan python</p> <p>b. Mampu membedakan antara metode Invers, Acceptance Rejection, Composition dan Convolution.</p> <p>a. <i>Able to explain random number generation algorithm and implement it in R and python programs</i></p> <p>b. <i>Be able to distinguish between Inverse, Acceptance Rejection, Composition and Convolution methods.</i></p>	<p>Tugas, Observasi di kelas Tes Presentasi Makalah</p> <p><i>Task, Observation in class Test Presentation Paper</i></p>	<p>Ceramah Interaktif, PBL Praktikum</p> <p><i>Interactive Lectures, Discussions, PBL Practice</i></p> <p><b>TM: 3x50"</b> <b>LT: 3x60"</b> <b>BM: 3x60"</b></p>		<p>Pembangkitan bilangan acak</p> <ul style="list-style-type: none"> <li>- Metode Invers</li> <li>- Metode Acceptance Rejection</li> <li>- Metode Composition</li> <li>- Metode Convolution</li> </ul> <p><i>Random number Generation</i></p> <ul style="list-style-type: none"> <li>- <i>Inverse Method</i></li> <li>- <i>Acceptance method Rejection</i></li> <li>- <i>Composition method</i></li> <li>- <i>Convolution method</i></li> </ul>	5%
16	<b>Evaluasi Akhir Semester / Ujian Akhir Semester/Final Exam</b>						



