

MODULE HANDBOOK

INTRODUCTION TO ECONOMETRICS



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

ENDORSEMENT PAGE



MODULE HANDBOOK INTRODUCTION TO ECONOMETRICS 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>	Dr. Ir. Setiawan, M.S.	Dosen Lecturer		
Pemeriksa dan Pengendalian <i>Review and Control</i>	Dr. Ir. Setiawan, MS ; Dr. Muhammad Sjahid Akbar, Santi Puteri R, M.Si, Ph.D, Prof. Dr. rer.pol. Heri Kuswanto, M.Si Dr.rer.pol. Dedy Dwi P, M.Si	Tim kurikulum Curriculum team		
Persetujuan <i>Approval</i>	Dr. Ir. Setiawan, M.S.	Koordinator RMK Course Cluster Coordinator		
Penetapan <i>Determination</i>	Dr. Kartika Fithriasari, M.Si	Kepala Departemen Head of Department		

MODULE HANDBOOK

INTRODUCTION TO ECONOMETRICS

Module name	INTRODUCTION TO ECONOMETRICS	
Module level	Undergraduate	
Code	SS234416	
Course (if applicable)	INTRODUCTION TO ECONOMETRICS	
Semester	4	
Person responsible for the module	Dr. Ir. Setiawan, M.S.	
Lecturer	Dr. Ir. Setiawan, MS, ; Dr. Muhammad Sjahid Akbar, Santi Puteri R, M.Si, Ph.D, Prof. Dr. rer.pol. Heri Kuswanto, M.Si Dr.rer.pol. Dedy Dwi P, M.Si	
Language	Bahasa Indonesia and English	
Relation to curriculum	Undergraduate degree program, mandatory, 4th semester.	
Type of teaching, contact hours	Lectures, <50 students	
Workload	1. Lectures[L]: 3 x 50 = 150 minutes per week. 2. Exercises and Assignments[EA]: 3 x 60 = 180 minutes (3 hours) per week. 3. 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	Regression Analysis	
Learning outcomes and their corresponding PLOs	<p>CLO.1 Understand economic terms and provide an understanding of the basic understanding and concepts of economics</p> <p>CLO.2 Able to explain economic theory (micro and macro) verbally, graphically, and mathematically</p> <p>CLO.3 Able to apply economics to analyze data in their field of work with appropriate statistical methods</p> <p>CLO.4 Able to identify and formulate problems in their field of work into an economic model to solve problems</p> <p>CLO.6 Have knowledge of current and future issues related to the economic sector (micro and macro)</p>	<p>PLO-9</p> <p>PLO-10</p>

	<p>CLO.7 Able to communicate effectively and work together in interdisciplinary and multidisciplinary teams</p> <p>CLO.8 Having professional responsibility and ethics</p> <p>CLO.9 Able to motivate yourself to think creatively and learn throughout life</p>	
Content	<p>Econometrics is a course in the field of economic and financial statistics. The purpose of this course is to be able to apply statistical methods in the field of economics. In this course, students will learn about econometric methodology in research which includes making model specifications, estimating models, evaluating the results of model estimates, and evaluating forecasting power. The econometric models discussed include single equations, SUR, as well as both static and dynamic simultaneous equations with applications in micro and macro economics. In this lecture, case studies will also be presented to evaluate the results of other people's research, as well as econometric modeling so that they can be used as tools in decision making to solve problems in real cases.</p>	
Assessment and its weight	<p>Study Case(25%) Project(30%) Cognitive - Midterm Exam(20%) Cognitive - Final Exam(25%)</p>	
Media employed	<p>LCD, whiteboard, websites (myITS Classroom), zoom</p>	
Reading list	<ol style="list-style-type: none"> 1. Gujarati,. "Basic Econometrics". Fourth Edition. McGraw-Hill Companies. 2004 2. Setiawan dan Kusri DE,. Ekonometrika. 2008 3. Koutsoyiannis, A. Theory of Econometrics 4. Kmenta, J. Elements of Econometrics, 2d ed., Macmillan, New York, 1986 5. Greene, William H.: Econometric Analysis, 4th ed., Prentice Hall, Englewood Cliffs, N. J., 2000. 6. Sadono Sukirno. Mikro Ekonomi Teori Pengantar. PT Raja Grafindo Persada, Jakarta. 2008 	



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

Kode Dokumen

RENCANA PEMBELAJARAN SEMESTER/
SEMESTER LEARNING PLAN

MATA KULIAH (MK)/ <i>Course</i>	KODE/ <i>Code</i>	Rumpun MK/ <i>Course Group</i>	BOBOT (sks)/ <i>Weight (credit)</i>		SEMESTER/ <i>Semester</i>	Tgl Penyusunan/ <i>Drafting Date</i>
Pengantar Ekonometrika / <i>INTRODUCTION TO ECONOMETRICS</i>	SS234416	ANDEF	T=3	P=0	IV	11 Januari 2023
OTORISASI/ <i>AUTHORIZATION</i>	Pengembang RPS/ <i>RPS Developer</i>		Koordinator RMK/ <i>Course Group Coordinator</i>		Ketua PRODI/ <i>Head of Department</i>	
	Dr. Ir. Setiawan, MS, Dr. Muhammad Sjahid Akbar, Santi Puteri R, M.Si, Ph.D, Prof. Dr. rer.pol. Heri Kuswanto, M.Si Dr.rer.pol. Dedy Dwi P, M.Si		Dr. Ir. Setiawan, MS		Dr. Kartika Fithriasari, M.Si	
Capaian Pembelajaran (CP)/ <i>Learning Achievement</i>	CPL-PRODI yang dibebankan pada MK/ <i>PLO</i>					
	CPL-9	Mampu menerapkan metode statistika untuk menganalisis permasalahan teoritis dan riil				
	CPL-10	Mampu menerapkan metode statistika Bisnis, Industri, Ekonomi, Sosial, Kesehatan, atau Lingkungan pada permasalahan riil				
	<i>PLO-9</i>	<i>Able to apply statistical methods to analyze theoretical and real problems</i>				
	<i>PLO-10</i>	<i>Able to apply business, industrial, economic, social, health or environmental statistical methods to real problems</i>				
	Capaian Pembelajaran Mata Kuliah (CPMK)/ <i>CLO</i>					

CPMK.1	Mampu memahami definisi, ruang lingkup, dan tahapan penelitian ekonometrika.
CPMK.2	Memformulasikan fenomena/masalah ekonomi mikro dan makro dalam model ekonometrika dan memilih metode estimasi (statistik) yang sesuai
CPMK.3	Mampu mengaplikasikan metodologi ekonometrika di bidang kerjanya
CPMK.4	Mampu memformulasikan persoalan di bidang kerjanya ke dalam model ekonometrika dengan persamaan tunggal maupun sistem persamaan (SUR dan simultan) untuk menyelesaikan masalah
CPMK.6	Memiliki pengetahuan tentang isu terkini dan mendatang yang berkaitan dengan bidang ekonometrika supaya mampu mengambil keputusan yang tepat berdasarkan analisis model ekonometrika (mikro dan makro) , serta mampu mengkomunikasikan hasil analisis baik secara lisan maupun tertulis
CPMK.7	Mampu berkomunikasi secara efektif dan bekerjasama dalam tim yang interdisiplin dan multidisiplin
CPMK.8	Memiliki tanggung jawab dan etika profesi
CPMK.9	Mampu memotivasi diri untuk berpikir kreatif dan belajar sepanjang hayat
<i>CLO.1</i>	<i>Understand economic terms and provide an understanding of the basic understanding and concepts of economics</i>
<i>CLO.2</i>	<i>Able to explain economic theory (micro and macro) verbally, graphically, and mathematically</i>
<i>CLO.3</i>	<i>Able to apply economics to analyze data in their field of work with appropriate statistical methods</i>
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<i>CLO.6</i>	<i>Have knowledge of current and future issues related to the economic sector (micro and macro)</i>
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<i>CLO.8</i>	<i>Having professional responsibility and ethics</i>
<i>CLO.9</i>	<i>Able to motivate yourself to think creatively and learn throughout life</i>

Matrik CPL – CPMK										
<i>PLO-CLO Matrix</i>										
CPMK	CPL-01	CPL-02	CPL-03	CPL-04	CPL-05	CPL-06	CPL-07	CPL-08	CPL-09	CPL-10
CPMK-1		V	V							
CPMK-2	V									
CPMK-3	V	V								
CPMK-4										
CPMK-5										
CPMK-6										
CPMK-7										
CPMK-8										

		CPMK-9										
Deskripsi Singkat MK/ Course Description	<p>Ekonometrika merupakan salah satu matakuliah di bidang statistika ekonomi dan finansial. Tujuan dari matakuliah ini adalah agar mahasiswa mampu menerapkan metode statistika di bidang ekonomi. Pada matakuliah ini, mahasiswa akan belajar tentang metodologi ekonometrika dalam penelitian yang meliputi membuat spesifikasi model, estimasi model, melakukan evaluasi hasil estimasi model, serta evaluasi daya peramalan. Model ekonometrika yang dibahas meliputi persamaan tunggal yang statis maupun yang dinamis dengan aplikasi pada ekonomi mikro dan makro. Pada kuliah ini, akan disampaikan juga studi kasus untuk mengevaluasi hasil penelitian orang lain, serta pemodelan ekonometrika agar dapat digunakan sebagai alat dalam pengambilan keputusan untuk menyelesaikan masalah pada kasus real.</p> <p><i>Econometrics is a course in the field of economic and financial statistics. The purpose of this course is to be able to apply statistical methods in the field of economics. In this course, students will learn about econometric methodology in research which includes making model specifications, estimating models, evaluating the results of model estimates, and evaluating forecasting power. The econometric models discussed include single equations, SUR, as well as both static and dynamic simultaneous equations with applications in micro and macro economics. In this lecture, case studies will also be presented to evaluate the results of other people's research, as well as econometric modeling so that they can be used as tools in decision making to solve problems in real cases</i></p>											
Bahan Kajian: Materi Pembelajaran/ Course Material	<p>Dasar Sains, Teori Statistika, Pengumpulan Data, Deskripsi dan Eksplorasi, Komputasi dan Data Processing, Pemodelan, Industri dan Bisnis, Ekonomi dan Manajemen</p> <p><i>Statistics Theory, Collecting Data, Description and Exploration, Computation and Data Processing, Modeling, Industrial and Business, Economic and Management</i></p>											
Pustaka/ References	Utama/Primary:											
	1. Gujarati,. "Basic Econometrics". Fourth Edition. McGraw-Hill Companies. 2004											
	Pendukung/Secondary:											
	2. Setiawan dan Kusri DE,. Ekonometrika. 2008 3. Koutsoyiannis, A. Theory of Econometrics											

	<p>4. Kmenta, J. Elements of Econometrics, 2d ed., Macmillan, New York, 1986</p> <p>5. Greene, William H.: Econometric Analysis, 4th ed., Prentice Hall, Englewood Cliffs, N. J., 2000.</p> <p>6. Sadono Sukirno. Mikro Ekonomi Teori Pengantar. PT Raja Grafindo Persada, Jakarta. 2008</p>						
Dosen Pengampu/ Lecturers	Dr. Ir. Setiawan ; Dr. Drs. Agus Suharsono, MS ; Dr. Muhammad Sjahid Akbar, S.Si. M.Si						
Matakuliah syarat/ Pre-requisite Course	Analisis Regresi <i>Regression Analysis</i>						
Mg Ke- Week	Kemampuan akhir tiap tahapan belajar (Sub-CPMK) Final capability for each learning step	Penilaian Evaluation		Bantuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu]		Materi Pembelajaran [Pustaka] Learning Material [References]	Bobot Penilaian (%) Evaluation Weight (%)
		Indikator Indicator	Kriteria & Bentuk Criteria and Format	Luring Offline	Daring Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Mampu memahami definisi dan ruang lingkup ekonometrika <i>Able to understand the definition and scope of econometrics</i>	<ul style="list-style-type: none"> Dapat menjelaskan pengertian model dan model ekonometrika Dapat menjelaskan definisi Ekonometrika Dapat menjelaskan ruang lingkup ekonometrik 	Ceramah dan Diskusi, <i>Lectures and Discussions,</i>	TM: 3x50" LT: 3x60" BM: 3x60" L: 3x50" EA: 3x60" IL: 3x60"		Gujarati,. "Basic Econometrics". Fourth Edition. McGraw-Hill Companies. 2004	7%/7%

		<ul style="list-style-type: none"> • <i>Can explain the meaning of models and econometric models</i> • <i>Can explain the definition of Econometrics</i> • <i>Can explain the scope of econometrics</i> 					
2-3	<p>Permintaan dan Penawaran, keseimbangan pasar, serta produksi. <i>Demand and supply, market balance, and production</i></p>	<ul style="list-style-type: none"> • Pengertian permintaan & penawaran. • Kurva permintaan & penawaran serta pergerakannya • Elastisitas • Harga keseimbangan • Shortage dan surplus. • Bentuk campur Tangan pemerintah • Produksi total, produksi marginal, produksi rata-rata • Klasifikasi biaya : TC, TFC, TVC, AC, AFC, AVC, MC. • <i>Definition of demand & supply.</i> • <i>Demand & supply curves and their movements</i> • <i>Elasticity</i> • <i>Balance price</i> • <i>Shortage and surplus.</i> • <i>Forms of</i> 	<p>Ceramah Diskusi, latihan soal</p> <p><i>Lectures, Discussions, Exercise</i></p>	<p>TM: 2x3x50" LT: 2x3x60" BM: 2x3x60"</p> <p><i>L: 2x3x50"</i> <i>EA: 2x3x60"</i> <i>IL: 2x3x60</i></p>		<p>Sukirno, S., Mikro Ekonomi Teori Pengantar. PT Raja Grafindo Persada, Jakarta. 2008</p>	13%/20%

		<p><i>government intervention</i></p> <ul style="list-style-type: none"> • <i>Total production, marginal production, average production</i> • <i>Cost classification : TC, TFC, TVC, AC, AFC, AVC, MC</i> 					
4-5	<p>Pendapatan Nasional 2, 3, dan 4 sektor <i>National Income 2, 3, and 4 sectors</i></p>	<ul style="list-style-type: none"> • Dapat menjelaskan pendapatan nasional dalam perekonomian tertutup dan terbuka. • Dapat menghitung & menginterpretasikan angka pengganda • Dapat menghitung dan menjelaskan Inflationary gap dan deflationary gap • <i>Can explain National income in the economy closed and open.</i> • <i>Can calculate & interpret multiplier numbers</i> • <i>Can count and explained inflationary gap and deflationary gap</i> 	<p>Ceramah Diskusi dan latihan soal, praktikum</p> <p><i>Lectures, Discussions, Exercise , and practice</i></p>	<p>TM: 2x3x50" LT: 2x3x60" BM: 2x3x60"</p> <p><i>L: 2x3x50" EA: 2x3x60" IL: 2x3x60"</i></p>		<p>Gujarati,. "Basic Econometrics". Fourth Edition. McGraw-Hill Companies. 2004</p>	8%/28%
6	<p>Dapat memahami tahapan-tahapan dalam penelitian ekonometrika <i>Can understand the stages in econometric research</i></p>	<ul style="list-style-type: none"> • Dapat menjelaskan cara membuat spesifikasi model • Dapat menjelaskan cara melakukan estimasi parameter model regresi. 	<p>Ceramah Diskusi, tes</p> <p><i>Lectures, Discussions, Test</i></p>	<p>TM: 3x50" LT: 3x60" BM: 3x60"</p> <p><i>L: 3x50" EA: 3x60" IL: 3x60"</i></p>		<p>Gujarati,. "Basic Econometrics". Fourth Edition. McGraw-Hill Companies. 2004</p>	7%/35%

		<ul style="list-style-type: none"> • Dapat menjelaskan cara melakukan evaluasi terhadap model yang dihasilkan • Dapat menjelaskan cara melakukan evaluasi Terada daya peramalan model • <i>Can explain how to make model specifications</i> • <i>Can explain how to estimate the parameters of the regression model.</i> • <i>Can explain how to evaluate the resulting model</i> • <i>Can explain how to evaluate the forecasting power of the model</i> 					
7	Dapat memahami analisis regresi dan contohnya di bidang ekonomi <i>Can understand regression analysis and its examples in economics</i>	<ul style="list-style-type: none"> • Dapat menerapkan analisis regresi pada pemodelan ekonometrika • Dapat menjelaskan asumsi–asumsi yang harus dipenuhi • <i>Be able to apply regression analysis to econometric modeling</i> • <i>Can explain the assumptions that must be met</i> 	Ceramah Diskusi, latihan soal <i>Lectures, Discussions, Exercise</i>	TM: 3x50" LT: 3x60" BM: 3x60" <i>L: 3x50"</i> <i>EA: 3x60"</i> <i>IL: 3x60"</i>		Gujarati,. "Basic Econometrics". Fourth Edition. McGraw-Hill Companies. 2004	7%/42%
8	ETS/Midterm						
9	• Memahami Asumsi model regresi	• Dapat menjelaskan asumsi–asumsi yang	Ceramah Diskusi, latihan soal	TM: 3x50" LT: 3x60"		Gujarati,. "Basic Econometrics".	8%/58%

	<p>dengan metode estimasi OLS, beserta pelanggarannya. (multikolinearitas, heteroskedastisitas, dan otokorelasi) serta</p> <ul style="list-style-type: none"> • Memahami pengertian, konsekuensi, mendeteksi serta mengatasi multikolinearitas • <i>Understanding the assumptions of regression models with the OLS estimation method, and their violations. (multicollinearity, heteroscedasticity, and autocorrelation) and</i> • <i>Understanding meaning, consequences, detecting and overcoming multicollinearity</i> 	<p>harus dipenuhi pada estimasi parameter model OLS</p> <ul style="list-style-type: none"> • Dapat menjelaskan pengertian multikolinearitas • Dapat menjelaskan konsekuensi jika terdapat multikolinearitas • Dapat mendeteksi adanya multikolinearitas • Dapat mengatasi bila terjadi multikolinearitas • <i>Can explain the assumptions that must be fulfilled in the parameter estimation of the OLS model</i> • <i>Can explain the meaning of multicollinearity</i> • <i>Can explain the consequences if there is multicollinearity</i> • <i>Can detect the presence of multicollinearity</i> • <i>Can overcome when there is multicollinearity</i> 	<p><i>Lectures, Discussions, Exercise</i></p>	<p>BM: 3x60" L: 3x50" EA: 3x60" IL: 3x60"</p>		<p>Fourth Edition. McGraw-Hill Companies. 2004</p>	
10	Memahami pengertian,	<ul style="list-style-type: none"> • Dapat menjelaskan pengertian 	Ceramah Diskusi, latihan soal, tes	TM: 3x50" LT: 3x60"		Gujarati,. "Basic Econometrics".	15%/73%

	<p>mendeteksi, konsekuensi, & mengatasi heteroskedastisitas dan otokorelasi</p> <p><i>Understanding meaning, detecting, consequences, & overcoming heteroscedasticity and autocorrelation</i></p>	<p>heteroskedastisitas dan otokorelasi</p> <ul style="list-style-type: none"> • Dapat menjelaskan konsekuensi jika terdapat heteroskedastisitas dan otokorelasi • Dapat mendeteksi adanya heteroskedastisitas dan otokorelasi • Dapat mengatasi bila terjadi heteroskedastisitas dan otokorelasi • <i>Can explain the meaning of heteroscedasticity and autocorrelation</i> • <i>Can explain the consequences if there is heteroscedasticity and autocorrelation</i> • <i>Can detect the presence of heteroscedasticity and autocorrelation</i> • <i>Can overcome when there is heteroscedasticity and autocorrelation</i> 	<p><i>Lectures, Discussions, Exercise, test</i></p>	<p>BM: 3x60"</p> <p>L: 3x50"</p> <p>EA: 3x60"</p> <p>IL: 3x60"</p>		<p>Fourth Edition. McGraw-Hill Companies. 2004</p>	
11-12	<p>Dapat membuat model otoregresif dan model distribusi lag (ARDL) (mulai pemberian tugas studi kasus)</p> <p><i>Can create autoregressive models and lag distribution models (ARDL) (start</i></p>	<ul style="list-style-type: none"> • Dapat membuat dan mengerti interpretasi model distribusi lag • Dapat membuat dan mengerti interpretasi model otoregresif • <i>Can make and understand the interpretation Lag distribution model</i> 	<p>Ceramah Diskusi, latihan soal,</p> <p><i>Lectures, Discussions, Exercise</i></p>	<p>TM: 2x3x50"</p> <p>LT: 2x3x60"</p> <p>BM: 2x3x60"</p> <p>L: 2x3x50"</p> <p>EA: 2x3x60"</p> <p>IL: 2x3x60"</p>		<p>Gujarati,. "Basic Econometrics". Fourth Edition. McGraw-Hill Companies. 2004</p>	20%/93%

	<i>giving case study assignments)</i>	<ul style="list-style-type: none"> • <i>Can make and Understand interpretation autoregressive model</i> 					
13-14	Dapat membuat model regresi dengan data panel <i>Can create a regression model with panel data</i>	<ul style="list-style-type: none"> • Dapat memahami pengertian data panel • Dapat melakukan estimasi model regresi dengan data panel dengan pendekatan efek tetap dan efek random • <i>Can understand the meaning of panel data</i> • <i>Be able to estimate the regression model with panel data with fixed effects and random effects approaches</i> 	Ceramah Diskusi, latihan soal, <i>Lectures, Discussions, Exercise</i>	TM: 2x3x50" LT: 2x3x60" BM: 2x3x60" <i>L: 2x3x50"</i> <i>EA: 2x3x60"</i> <i>IL: 2x3x60"</i>			7%/100%
15	Studi Kasus <i>Case study</i>	Dapat menerapkan ekonometrika pada kasus real dan mengkomuni-kasikan secara lisan maupun tulisan. <i>Can apply econometrics to real cases and communicate orally and in writing.</i>					
16	Evaluasi Akhir Semester / Ujian Akhir Semester/<i>Final Exam</i>						

