



Universitas Indonesia
Faculty of Economics and Business

SYLLABUS
ECEU601201
Statistika Lanjutan (Reguler Program)
Statistics for Economics and Business 2 (International Program)
(3 Credit Semester)

Lecturers

• Sita Wardhani (Koordinator)	• Ainul Huda
• Pribadi Setiyanto	• Nurlatifah
• Chotib	• Witri Indriyani
• Masarina Flukeria	
• Dewi Ratna Sjari	

Pre-requisite: Statistics for Economics and Business (ECEU601200)

Course description:

As the continuation of Statistics for Economics and Business this course will cover various inference methods, especially in hypothesis testing frequently used in economics and business. There will be also topic on non-inference time series analysis.

Topics to be delivered are:

1. Statistical inference for two populations (arithmetic mean and proportion)
2. Inference for variances
3. Some test using Chi-Square
4. Analysis of variance
5. Regression analysis
6. Time series analysis
7. Non-parametric tests

AACSB Learning Goal and Learning Objective

1. Learning Goal: Students understand basic business and economics concept
2. Learning Objective: Apply basic quantitative methods by using appropriate tools
3. Traits:
 - i. Able to use relevant quantitative method
 - ii. Able to conduct relevant data analysis for solving specified economic research problem

References:

Main reference: Sanjiv Jaggia and Alison Kelly (2013), *Business Statistics: Communicating with Numbers*, McGraw-Hill. **(JK)**.

Students may also access: (but not limited to)

Douglas A. Lind, William G. Marchal and Samuel A. Wathen, (2010), *Statistical Techniques in Business & Economics*, 14thed, McGraw-Hill. **(LMW)**.

Newbold, Paul, *Statistics for Business and Economics*, 7thEd, Prentice Hall Inc., (2010).

Course Assessment

The students will be evaluated on the basis of their performance as follows:

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|------------------------------------|-----|
| 1. Homework, assignments, Tutorial | 5% |
| 2. Class test (quiz) | 10% |
| 3. Group (final) Assignment | 15% |
| 4. Midterm exam | 35% |
| 5. Final exam | 35% |

Detailed contents

Week	Topic	Subtopic	Readings
1, 2	<ul style="list-style-type: none">• Introduction• Grouping (each consist of 4 – 6 students)	Introduction and some explanation on how the class will be managed	
	Review on inference	General formula for confidence interval and general procedure for hypothesis testing using normal distribution	JK 8, 9 LMW 9, 10
	Inference based on two samples	<ul style="list-style-type: none">• Confidence interval for the difference between two means (independent samples)• Confidence interval for mean of the difference (dependent or matched-pairs sampling)• Confidence interval for proportion of two independent populations	JK 10 LMW 11
	Inference based on two samples	<ul style="list-style-type: none">• Hypothesis testing for the difference between two means (independent samples)• Hypothesis testing for mean of the difference (dependent or matched-pairs sampling)• Hypothesis testing for proportion of two independent populations• Using Excel for testing of two populations	
3	Inference on variance	<ul style="list-style-type: none">• Testing of single variance• Testing of two variances• Using Excel for testing of variance	JK 11 LMW 12
4	Some Chi-square tests	<ul style="list-style-type: none">• Test of goodness-of-fit (for multinomial and some other theoretical distributions)• Test of independency• Using Excel for testing of independency	JK 12 LMW 17

5, 6	Anova (One-Way)	<ul style="list-style-type: none"> • The use of Anova • The test statistic • Anova Table • Multiple comparison using LSD (Fisher) 	JK 13 LMW 12
	Two-way Anova	<ul style="list-style-type: none"> • Two-way Anova without Replication • Two-way Anova with replication • Using Excel for Anova 	
7	Review		
Midterm Exam			
8, 9	Simple regression	<ul style="list-style-type: none"> • The meaning of regression and correlation • Estimating regression line using Ordinary Least Squares (OLS) method • Testing parameters of regression line • Confidence interval of prediction • Using Excel for regression line 	JK 14, 15, 16, 17 LMW 13, 14
	Multiple regression	<ul style="list-style-type: none"> • The meaning of multiple regression • Testing on multiple regression • The use of dummy variable in qualitative independent variable • Introduction to the functional forms in regression analysis • Using Excel for multiple regression 	
10, 11	Time series analysis 1	<ul style="list-style-type: none"> • The meaning of time series analysis • Component of time series data • Various trend model: linear and exponential 	JK 18 LMW 16
	Time series analysis 2	<ul style="list-style-type: none"> • Seasonal variation • Forecasting in time series using trend and seasonal index • Using Excel for time series analysis 	
12, 13	Some nonparametric tests	<ul style="list-style-type: none"> • Introduction to nonparametric method • Wilcoxon sign rank test • Wilcoxon rank sum test 	JK 20 LMW 18
	Some nonparametric tests	<ul style="list-style-type: none"> • Kruskal-Wallis test • Spearman rank correlation test 	
14	Review		

Plagiarism

Students should maintain originality and respect intellectual property rights. Therefore, students should avoid conducting any act of plagiarism when doing written assignments (if any), which may take a form of short individual / group paper and / or summary.

The followings are acts of plagiarism:

- Copying paragraphs, sentences, a single sentence, or even a significant part of a sentence directly without enclosing them in quotation marks and appropriately footnoted;
- Using and / or developing other's ideas found in printed materials or film elsewhere without explicitly referencing them to the respective author or the source of the idea.

Plagiarism is a serious infringement of intellectual property rights. Any assignment that contains presumed plagiarism will be marked zero.

Since students are required to write group papers, students should sign a Statement of Authorship and attach it to their papers before paper submission. Lecturer or tutor will refuse to mark any paper that has no signed Statement of Authorship attached.

Sanction for plagiarism:

- First time: paper will be graded as F
- Second time: final grade for the course will be graded as F
- Third time: expelled from UI

Additional Course Policies

There will be several quizzes @ 30 minutes the average result of which is used as course assessment.