BACHELOR of ECONOMICS
International Program

Thammasat University | Thailand

EE 325 Introductory Econometrics 2/2017

First Homework

Instruction

1. Please submit the work individually.
2. Due date 20th March 2018 at 9.40 am.
3. Group discussion for the homework is necessary.
4. Use basic calculator is best for mid-term practice.
5. Please use only blue, readable, and non-frixion ink.
6. Using Excel, Stata, or EVIEWS for checking the result is helpful

Name Student ID.

1. Fill in the blank

X_i	Y_i	$\sum_i X_i$	$\sum_i Y_i$	$\bar{X}$	$\bar{Y}$	x_i	y_i	$\sum_i x_i y_i$	$\sum_i (x_i)^2$	$\sum_i (y_i)^2$	$\hat{Y}_i$	$\hat{u}_i$
1	20											
2	19											
3	18											
4	17											
5	16											
6	15											
7	14											
8	13											
9	12											
10	11											
11	10											
12	9											
13	8											
14	7											
15	6											
16	5											

2. Calculate simple OLS estimators for $\beta_1 and\ \beta_2$, their variances, and standard errors as well as covariance.
3. Plot the regression line of $\hat{Y}_i$ against $\hat{X}_i$.
4. Show the evidence of heteroskedasticity by plotting the distribution of errors term and calculating variances of estimated errors.
5. What is the logic behind Ordinary least Squares (OLS)?

6. What is the minimization problems of OLS? Why don't we minimize the sum of the errors term u_i ?
7. If the value of X increases along with the variation of Y, would it violate any assumption of OLS regression? Explain.