MINISTRY OF EDUCATION AND TRAINING
NATIONAL ECONOMICS UNIVERSITY

THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

SYLLABUS
PROGRAM OF PUBLIC MANAGEMENT AND POLICY IN ENGLISH
(E-PMP)

LEVEL OF EDUCATION: UNDERGRADUATE TYPE OF EDUCATION: FULL-TIME

1. GENERAL INFORMATION

- ***Course title (Vietnamese): Kinh tế lượng***
- ***Course title (English): Econometrics***
- ***Course code: EPMP1133***
- ***Knowledge group: Basic knowledge***
- ***Credit: 3***
- ***Prerequisite courses: Mathematics for economists***
  Probability and statistics

2. THE DEPARTMENT IN CHARGE: Economics Management

3. DESCRIPTION

The econometrics course is the application of statistical techniques to economic models to display quantitative results and to verify economic theories. The course also introduces students to the theory and application of econometric methods. It covers the basic tools of estimation and inference in the context of linear regression models, single equations, and mainly deals with least-squares estimation methods. The course emphasizes the intuitive understanding and practical application of these basic regression analysis tools.

4. REFERENCES

Basic Econometrics, 5th edition by Damodar Gujarati and Porter

5. COURSE OBJECTIVES:

Goals (Gx)	Descriptions	Program learning outcomes (PLOs)	Level
[1]	[2]	[3]	[4]
G1 (Knowledge)	Understand and apply econometric knowledge in describing, explaining,	KT2	3

	analyzing and evaluating socio-economic issues.		
G2 (Skills)	Have skills to use regression analysis, Eview software, Excel for analysis and forecasting of economic issues - social skills and writing report analyzing the data in English	KN3 KN5	3 3
G3 (Level of autonomy and responsibility)	Learning serious, have a sense of responsibility, actively cooperating in approaching new knowledge, autonomy and take responsibility at work.	NLTC 2	4

6. COURSE LEARNING OUTCOMES

Goal	CLO (CLOx.x)	Descriptions	Level
[1]	[2]	[3]	[4]
G1 (Knowledge)	CLO1.1	Understand the basics of econometrics.	2
	CLO1. 2	Using the knowledge of international quality to describe, explain, analyze and evaluate the socio-economic problems.	3
G2 (Skills)	CLO2.1	Have skills to apply regression analysis to analyze, forecasting social-economic problems	3
	CLO2.2	Have skills in using specialized softwares Eview, Excel in analyzing socio-economic problems	3
	CLO2.3	Have skills to write report analyzing the data in English	3
G3 (Level of autonomy and responsibility)	CLO3.1	Learning seriously and approaching to new knowledge at work	4
	CLO3.2	Have a sense of responsibility and actively cooperate in work	4
	CLO3. 3	Autonomy at work, willing to take responsibility for the result of their own works.	4

7. COURSE ASSESSMENT

Evaluation Form	Content	Time	CLOs	Evaluation criteria	Ratio (%)
[1]	[2]	[3]	[4]	[5]	[6]
Learning process evaluation		From week 1 to week 1 2	CLO1.1, CLO 1.2, CLO2.1, CLO2.2, CLO2.3, CLO3.1, CLO3.2 , CLO3. 3	- Full class participation level. - The level of lesson preparation from home (complete, thoroughly) - Level of participation in answering lecturers' questions (number of times and quality of answers) - Level of participation in questioning with lecturer (number of times and quality of questions)	10%
Mid-term evaluation	Chapters 5 to 13	From week 5 to week 1 0	CLO1.1 , CLO2.1, CLO2.2, CLO3.1, CLO3.2 , CLO3. 3	The level of individual homework completion (on time, the quality of the assignment associating	20%

				with the level of knowledge, skills, and capacity to be autonomous and take responsibility for the course learning outcomes)	
Group presentation evaluation	Chapters 1 to 13	Week 11	CLO 1.2, CLO2.3, CLO3.1, CLO3.2 , CLO3. 3	The level of completion of group assignments, presentations (on time, the quality of the assignment associating with the level of knowledge, skills, and capacity to be autonomous and take responsibility for the course learning outcomes)	20%
End-of-term evaluation	Chapters 1 to 13		CLO1.1, CLO 1.2, CLO2.1, CLO2.2, CLO2.3, CLO3.1, CLO3.2 , CLO3. 3	The level of completion of the final personal essay test	50%

				(the quality of the test is linked to the level of knowledge, skills, and capacity to be autonomous and take responsibility for the course learning outcomes)	

* The course uses turnitin software to assess academic integrity.

8. TEACHING PLAN

Week/ Session	Content	CLO	Activities	Assessment
[1]	[2]	[3]	[4]	[5]
1	Course introduction, EVIEWS, Excel tutorials, and group presentation tutorials, midterm exams, and final exams		**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and class discussion): 1 period	Evaluate the learning pr ocess , attitude, level of initiative and positivity in learning: 10%
2	Part 1: Single-Equation Models Regresssion model simple regression Chapter 1: The Nature of Regression Analysis - The essence of regression analysis - The nature of regression analysis - Terms and symbols	CLO1.1, CLO2.1, CLO3.1, CLO3.2,	**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and class discussion): 1 period	

	- Compare types of figures			
3	Chapter 2: Two-Variable Regression Model: Some Basic Ideas - Two-variable regression model: Some basic ideas - Random interference - Sample regression function (SRF) Chapter 3: Two-Variable Regression Model: The Problem of Estimation - Model h oi provided two variables: Estimate model. - Ordinary least squares method (OLS) - Sample regression function model: Assumes OLS method Simple linear regression model.	CLO1.1, CLO2.1, CLO2.2, CLO3.1, CLO3.2	**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and c lass discussion): 1 period	Do mid-term assignments 20%
4	Chapter 4: Classical Normal Linear Regression Model (CNLRM) - Classic Stand ard Linear Regression Model (CNLRM) - The probability distribution of the least squares estimate.	CLO 1.2 , CLO2. 2, CLO2.3, CLO3.1, CLO3.2 , CLO3. 3	**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and class discussion): 1 period	
5	Chapter 5: Two-Variable Regression: Interval Estimation and Hypothesis testing - Two-variable regression: Estimating confidence interval and testing hypothesis	CLO 1.2 , CLO2. 2, CLO2.3, CLO3.1, CLO3.2, CLO3. 3	Take the 60-minute midterm test Instructions for making presentations Lecture: 2 periods	

	- Properties of OLS estimation - Test hypothesis and confidence interval - Constructing confidence intervals for model parameters.			
6	Chapter 6: Extensions of Two-Variable Linear Regression Model - Extend the two-variable linear regression model - Using EVIEWS to estimate and verify - Evaluate reliability - Confidence interval and forecast for Y - Data range	CLO1.1, CLO 1.2, CLO2.1, CLO2.2, CLO2.3, CLO3.1, CLO3.2, CLO3.3	**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and class discussion): 1 period	
7	Chapter 7: Multiple Regression Analysis: The Problem of Estimation - regression analysis multiples: Estimating Model - Explanation for separate regression coefficients - Estimates OLS of regression function. - Characteristics of the OLS estimation. - Coefficient of determination of multiple R^2 and coefficient of determination of the adjusted multiple	CLO 1.2, CLO2.1, CLO2.2, CLO2.3, CLO3.1, CLO3.2, CLO3.3	**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and class discussion): 1 period	
8	Chapter 8: Multiple Regression Analysis: The Problem of Inference - Multiple regression analysis: The problem of statistical inference	CLO 1.2, CLO2.1, CLO2.2, CLO2.3, CLO3.1,	**Study at home** : Prepare the materials in advance	

	- Hypotheses test in multiple regression - Check the meaning of multiple regression function - Analysis of variance - Analyze the relationship between R^2 and F - Construction of ANOVA board - Test the constraints in the multiple regression function - Test regression function - Chow Test - Test of the stability of the relationship	CLO3.2, CLO3.3	**Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and class discussion): 1 period	
9	Chapter 9: Dummy Variable Regression Models - A dummy variable regression model - The nature of dummy variables - Measurement results from the amount of the different groups Different types of dummy variable r egression - Interaction between two qualitative variables Use dummy variables to define structural changes - Chow Test on the unemployment rate .	CLO 1.2, CLO2.2, CLO2.3, CLO3.1, CLO3.2, CLO3.3	**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 3 periods Discussion (group discussion and class discussion): 1 period	
10	Part 2: Relaxing the Assumptions of the Classical Model - G auth set of classic models Chapter 10: Multicollinearity	CLO 1.2, CLO2.2, CLO2.3, CLO3.1, CLO3.2	**Study at home** : Prepare the materials in advance	

	- The nature of multi-collinearity - Consequences of multi-collinearity Multi- collinear detection - Fixing multi-collinearity	, CLO3.3	**Teaching and learning in class:** Lecture : 3 periods Discussion (group discussion and class discussion): 1 period	Group exercises, presentations 20%
11	Chapter 11: Heteroscedasticity - Variance error of change - The nature of the variance error of change - Consequences of Variable Variation Variance -Detecting Variance error of change - Fixing variance variance change	CLO 1.2, CLO2.2, CLO2.3, CLO3.1, CLO3.2, CLO3.3	Group presentation: 4 periods	
12	Chapter 12: Autocorrelation Or Serial Correlation - a phenomenon of autocorrelation or series correlation - The string data according to time - The nature of the auto-correlation phenomenon - The consequences of auto correlation - AutoCorrelation detection - Fixing auto-correlation Chapter 13: Model Specification and Diagnostic Testing - format models and testing to check defects of tissue formation	CLO 1.2, CLO2.2, CLO2.3, CLO3.1, CLO3.2, CLO3.3	**Study at home** : Prepare the materials in advance **Teaching and learning in class:** Lecture: 4 periods	Multiple choice and essay test: 50%

	Examination at the end of the period	CLO1.1, CLO 1.2, CLO2.1, CLO2.2, CLO2.3, CLO3.1, CLO3.2, CLO3.3	Examination: 90 minutes	

9. COURSE REQUIREMENT

9.1. Rules of class participation

- Students are responsible for attending all classes. In any case of absence from school due to force majeure reasons, there must be sufficient and reasonable proofs.

- Students are responsible for actively read materials in advance, proactively preparing lessons before going to class according to the instructions and requests of lecturers.

- Students who skip more than 20% of the lessons of the subject will be considered as not complete the course and have to retake the course

- Students who miss the deadline of individual and group assignments submision will receive a score of 0 for that assignment.

- Students will be randomly asked to answer questions during 12 sessions

- Regarding the communication between lecturers and students: Encourage students to participate in discussions (groups and individuals), give direct feedback to teachers about the content of the course, teaching and learning methods, teaching materials and handouts. Lecturers also encourage students to give feedback on the form, methods and contents of the tests to evaluate students' learning results. Students can communicate with lecturers in class, during office hours or via email. The valuable feedback from students contributes to improve the teaching and learning quality of the course

9.2. Rules of classroom behavior

- The module is conducted on the principle of respect for students and lecturers. All behaviors that interfere with the teaching and learning process are strictly prohibited.

- Students need to actively participate in lectures through discussions with lecturers (answer and ask questions) and group discussions, presentations

- Students must go to school on time. Students who are late more than 10 minutes after class starts will not be able to attend the class.

- Do not make noise, disturbing other students in the learning process.

- Do not eat, drink, chew gum, use devices such as phones, music players during class.

- Laptops and tablets are only used for the purpose of recording lectures, calculating, doing exercises. Absolutely do not use them for other purposes.

Hanoi, Date Month Year 20

DEAN OF FACULTY	**UNIVERSITY PRINCIPAL**
(Signed)	**(Signed)**