
COURSE SYLLABUS

FOR FULL-TIME UNDERGRADUATE PROGRAMS

(Issued under Decision No.1380/QĐ-ĐHKTQĐ on 15/8/2016 by the University President)

1. COURSE NAME: Environmental Statistics

Code: TKKT1115

Number of Credits: 02

2. DEPARTMENT IN CHARGE OF INSTRUCTION:

Socio-Economic Statistics

Office: Room 401-402, Building No 7, NEU

Office Hours: 8:00 – 17:00, from Monday to Friday

Office Telephone: 04.38693275

3. PRE-REQUISITE: None.

4. COURSE DESCRIPTION:

Environmental statistics focuses on studying a set of indicators on environment situation, availability and quality of natural resources, interaction between human being and natural environment, impacts of human being's activities to the environment and reaction of society to consequences of the activities. This subject is supplementary and needed for Socio-economic Statistics speciality and others such as Economics and Environment Management, Planning, Economics, Economic Administration.

5. COURSE OBJECTIVES:

This course provides students with statistical research methods applying in environment field such as survey, data synthesis and analysis; methodology in constructing and accounting indicator system of environment; methods to analyze changes in environment, factors impacting on the environment and impacts of environment on socio-economic activities. This course also equips students methodology in establishing and accounting system of socio-eco accounts as well as methodology to calculate indicator "green GDP" and apply I-0 (Input – Output) table in environment research.

6. CONTENT OF THE COURSE:

TENTATIVE SCHEDULE

<i>No</i>	<i>Contents</i>	<i>Total hours</i>	<i>In details</i>		<i>Notes</i>
			<i>Theory</i>	<i>Practice, Discussion, Exams</i>	
1	Chapter 1	4	3	1	
2	Chapter 2	5	3	2	
3	Chapter 3	6	4	2	
4	Chapter 4	4	3	1	
5	Chapter 5	4	3	1	
6	Chapter 6	6	4	2	
7	Midterm exam	1	-	1	
	Sum	30	20	10	

CHAPTER I – INTRODUCTION TO ENVIRONMENTAL STATISTICS

Ecological environment protection is becoming more and more important and urgent. In order to accomplish this mission, it needs to have environmental statistics. Chapter 1 will introduce general principles of environmental statistics such as objects, obligation of environmental statistics, indicator system of environment, and statistical methods applied to analyze ecological environment.

1.1. What is environmental statistics?

1.2. Roles of environmental statistics

1.3. The indicator system of environment

1.4. Introduction to analysis methods of environment

Texts and readings for the chapter:

1. Nguyen The Chinh (2003), Economic and Environmental Management Textbook, Statistic publishing house, Vietnam.
2. Phan Cong Nghia and Bui Duc Trieu (2012), Economic Statistics Textbook, National Economics publishing house, Vietnam.
3. The Environmental protection laws and the enforcement decrees guide, (1997), National politics publishing house, Vietnam.

CHAPTER II – SOCIAL SURVEYS IN ENVIRONMENTAL RESEARCHES

Statistics of factors effecting to environment and the influence of environment on socio-economic lives are difficult problems in quantitative research. Environmental statistics uses a characteristic method being social surveys (social surveys as the major method) in order to deal with the problems. chapter 2 will present basic principles of surveys in social research and characteristics for applying it to environmental researches such as procedure of surveys in social research, methods of interviewing, processing, analyzing data, and presenting survey results.

2.1. General principles of surveys in social research

2.1.1. The importance of surveys in social research

2.1.2. The subject of surveys in social research

2.1.3. The process of surveys in social research

2.2. Questionnaire design

2.2.1. The selection of methods

2.2.2. Techniques to make questions and design questionnaire

2.2.3. Interview methods

2.3. Other methods of collecting information

2.3.1. Observation method

2.3.2. Method of data analysis

2.4. Processing, analyzing and presenting survey results

2.5.1. Data processing and analyzing

2.5.2. Presenting survey results

Texts and readings for the chapter:

1. Tran Thi Kim Thu (2012), *Theory of Statistics*, National Economics publishing house, Vietnam.
2. Tran Thi Kim Thu (2012), *The textbook of Surveys in Social Research*, National Economics publishing house, Vietnam.

CHAPTER III – INDICATOR SYSTEM OF ENVIRONMENT

Evaluation of environment situation by the system of quantitative statistic indicators is the content of chapter 3. Quantitative measurement methods in environment are also presented in this chapter.

(noi dung cac muc khac so voi ban tieng Viet)

3.1. Indicator system of environment

3.1.1. Indicators on factorial environment

3.1.2. Indicators on partial environment

3.1.3. Indicators on general synthetic environment

3.2. Methods of evaluating environment

Texts and readings for the chapter:

1. Nguyen The Chinh (2003), *Economic and Environmental Management Textbook*, Statistic publishing house, Vietnam.
2. Phan Cong Nghia and Bui Duc Trieu (2012), *Economic Statistics Textbook*, National Economics publishing house, Vietnam.
3. *The Environmental protection laws and the enforcement decrees guide*, (1997), National politics publishing house, Vietnam.

CHAPTER IV –INTERGRATED ECONOMIC AND ENVIRONMENTAL SATELLITE ACCOUNTS

Economic activities are the human's main essential ones ; but the human also has put the environment in pollution and danger. Therefore, environmental statistical research is inseparable to economic research. The system of ecological - economic accounts is a

development of the system of national accounts; it links economics to environment. By this model, we can quantify interactive effects between economic activities and environmental activities. Those are contents of chapter 4.

4.1. Economic and environmental satellite accounts

4.1.1. General principles

4.1.2. Basic structure

4.2. The I/O table in environment research

4.2.1. The basic issues of I/O table

4.2.2. The I/O table in environment research

Texts and readings for the chapter:

1. Phan Cong Nghia, (2002), The textbook of System of National Accounts, Statistic publishing house, Vietnam.
2. Phan Cong Nghia and Bui Duc Trieu (2012), Economic Statistics Textbook, National Economics publishing house, Vietnam.

CHAPTER V –METHODS OF ANALYZING ENVIRONMENT

Statistical analysis in environment helps us be aware of environment fullier and more accurate in order to efficiently manage activities impacting environment, and vice versa . Main approaches of statistical analysis in environment are changes of structure, uniformity and differences of environment, and changes in environment, factors impacting environment and effects of environment to socio-economic life.

5.1. Analysis of variability, uniformity and differences in environment

5.2. Analysis of environmental changes

5.3. Analysis of factors affecting environment

5.4. Analysis of environmental impacts on socio-economic development

Texts and readings for the chapter:

1. Tran Thi Kim Thu (2012), *Theory of Statistics*, National Economics publishing house, Vietnam.

CHAPTER VI – STATISTICAL ANALYSIS IN ENVIRONMENTAL ENTERPRISES

Economic activities have to link with environment protection activities. Nowadays, there is a special economic sector, named the environmental economic sector, that is represented by environmental enterprises. Statistics in environmental enterprises helps point out roles of these enterprises in creating added value and its contribution to national economy as well as its roles in protecting ecological environment.

6.1. Information and statistics organization in environmental enterprises

6.2. Production factors and conditions in environmental enterprises

6.3. Production outcomes in environmental enterprises

6.4. Cost and benefit analysis of environmental enterprises

6.5. Analysis of environmental projects

Texts and readings for the chapter:

1. Nguyen The Chinh (2003), Economic and Environmental Management Textbook, Statistic publishing house, Vietnam.

2. Tran Thi Kim Thu (2012), *Theory of Statistics*, National Economics publishing house, Vietnam.

7. REQUIRED TEXTBOOKS & COURSE MATERIALS:

Phan Cong Nghia, (2007), Environmental Statistics textbook, National Economics University Publishing house, Vietnam

8. RECOMMENDED TEXTS & OTHER READINGS:

1. Nguyen The Chinh (2003), Economic and Environmental Management Textbook, Statistic publishing house, Vietnam.
2. Phan Cong Nghia, (2002), Textbook of System of National Accounts, Statistic publishing house, Vietnam.
3. Phan Cong Nghia and Bui Duc Trieu (2012), Economic Statistics Textbook, National Economics publishing house, Vietnam.
4. Tran Thi Kim Thu (2012), Theory of Statistics textbook, National Economics University, Vietnam.
5. Tran Thi Kim Thu (2012), *Theory of Statistics*, National Economics publishing house, Vietnam.
6. The Environmental protection laws and the enforcement decrees guide, (1997), National politics publishing house, Vietnam.

9. ASSESSMENT & GRADING POLICY:

The assessment and grading policy complies with the current regulations of the National Economics University. Specifically:

- class attendance: 10%
- Mid-term exam: 30%
- Final exam: 60%

(To be eligible for final exam, students need to achieve minimum scores of 5 and 3 for attending class and mid-term exam, respectively)

Hanoi, 2016

HEAD OF DEPARTMENT

PRESIDENT

(signed)

(signed)

MSc. Nguyen Thi Xuan Mai

Prof.Dr. Tran Tho Dat