# KT02006: Principles of Economic Statistics

## 1. General information

- o Term: 03
- o Credits: **Total credits 03 (Lecture: 03 – Practice: 0)**
- o **Self-study: 9** credits
- o Credit hours for teaching and learning activities: 45 hrs
- o Self-study: 135 hrs.
- o Department conducting the course:
  - ▪ Department: Department of Quantitative Analysis
  - ▪ Faculty: Faculty of economics and Rural development
- o Kind of the course:

| Foundation ⊠ | | Fundamental □ | | Specialized □ | |
|---|---|---|---|---|---|
| Compulsory ⊠ | Elective □ | Compulsory □ | Elective □ | Compulsory□ | Elective □ |

- o Prerequisite course(s): None

## 2. Course objectives and expected learning outcomes

*\* Course objectives***:**

- Knowledge: The course provided students with knowledge of the basic concepts of statistical theory, applying the statistic knowledge in collecting secondary data and primary data; synthesizing and presenting data; drawing conclusions about populations based only on sample information using methods of statistical inference; using statistical methods to describe and solve the social-economics problem; using correlation analysis in social and economics.

- Skills: The course provides students with skills in data collection, presenting data, and analyzing statistical documents.

- Attitude: The course performs students with responsibility and work ethic in research related to agricultural economics and rural.

*\* Course expected learning outcomes*

| Notation | Course expected learning outcomes (CLOs) After successfully completing this course, students are able to | Program performance criteria (PPC) |
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| **Knowledge** | | |
| CLO1 | **Apply** basic concepts on statistic theories, calculation methods of statistical indicators in analyzing the degree level of socio-economic problems and the changes of these problems efficiently<br>**Assessment criteria:**<br>**-** Individual homework enough and correctly<br>- Group exercise in analyzing concepts and the course knowledge | 1.1 |

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| | **Assessment method:** Discussion in class; group discussion or midterm exam | |
| CLO 2 | **Apply** statistics in data collection, data processing, and data synthetics and presenting data correctly. **Assessment criteria:** **-** Individual homework enough and correctly - Group exercise in data collection, data processing, and data synthetics and presenting data appropriately in analyzing socio-economic problems. **Assessment method:** Discussion in class; group discussion or midterm exam | 1.1 |
| **Skills** | | |
| CLO 3 | Design questionnaire, data collection, present data and data analyzing. **Assessment criteria:** **-** Individual homework enough and correctly - Group exercise in apply the course knowledge in develop questionnaire, data collection and presenting data fully and correctly. **Assessment method:** Discussion in class; group discussion or midterm exam | 1.1 |
| CLO 4 | Analytical and critical thinking in using the statistical results in assessing socio-economic correctly. **Assessment criteria:** **-** Individual homework enough and correctly - Group exercise in using, inferencing the statistical resuls in analyzing socio-economic problems. **Assessment method:** Discussion in class; group discussion or midterm exam | 4.3 |
| **Attitude** | | |
| CLO 5 | Identify clearly, actively learning, update information, looking for and exploiting data, information and other source of information to approach modern seriously. **Assessment criteria:** **-** Take part in all theory lesson and join in discussion in class - Take part in seriously group exercise to complete all tasks as requested **Assessment method:** Discussion in class; group discussion or midterm exam | 10.2 |

## 3. Course description

**KT02006: Principles of Economic Statistics (3:3-0-6, 135)**: This course consists 7 chapters with the content: Introduction; Data collection; Presenting and organizing data; Statistics on the

level of socio-economic phenomenon; Sampling method; Statistics on changes in socio-economic phenomena; Correlation analysis

## 4. Teaching and learning & assessment methods

| CLOs | CLO1 | CLO2 | CLO3 | CLO4 | CLO5 |
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| **Teaching methods** | | | | | |
| Lecturing | x | x | | | |
| Online lecturing | x | x | | | |
| Teaching through discussion | x | x | x | x | x |
| Teamwork | | | x | x | x |
| **Assessment** | | | | | |
| Rubric 1. Discussion in class (10%) | x | x | | | x |
| Rubric 2.1. Group excersice and presenting it (30%) | x | x | | | x |
| Rubric 2.2.  Midterm exam (30%) | | | | | |
| Rubric 3. Final exam (60%) | | x | x | x | x |

## 5. Student tasks

- Attendance: All students take part in this course must attend classes at least 75% of design hours according to the regulations of the Ministry of Education and Training;
- Preparation for the lecture: All students attending this course are required to read the textbook and reference materials before joining in class as requested by the lecturers.
- Assignment: All students must do group exercises.
- Final exam: All students that meet the requirements of taking a final exam can take part in the final exam.

## 6. Text books and references

*\* Text Books/Lecture Notes:*

Ngo Thi Thuan, Nguyen Huu Ngoan, Pham Van Hung (2006). Textbook of Principle of economic statistics; Publisher of Vietnam National University of Agriculture (in Vietnamese: Ngô Thị Thuận, Nguyễn Hữu Ngoan, Phạm Văn Hùng (2006): Giáo trình Nguyên lý thống kê kinh tế; Nhà xuất bản Nông nghiệp).

*\* Additional references:*

1. Ha Van Son (2004). Textook of statistical theory, Statistical publishier (in Vietnamese: Hà Văn Sơn (2004): Giáo trình lý thuyết thống kê; Nhà xuất bản thống kê)

2. Tran Thi Ky, Nguyen Van Phuc (2011): Statistical Principles, Publisher of Labour (in Vietnamese: Trần Thị Kỳ, Nguyễn Văn Phúc (2011): Nguyên lý thống kê; Nhà xuất bản lao động)

3. Nguyen Quyet (2010): Textbook of statistical principles, Vietnam National University Ho Chi Minh Press (in Vietnamese: Nguyễn Quyết (2010): Giáo trình nguyên lý thống kê; Nhà xuất bản Đại học Quốc Gia TPHCM)

4. James T. McClave, P George Benson and Terry T. Sincich (2017). Statistics for Business and Economics, 13th edition. Pearson.

5. Website of General Statistics Office of Vietnam: http://www.gso.gov.vn/

**7. Course outline**

| Week | Content | Course expected learning outcomes |
|------|---------|-----------------------------------|
| 1 | *Chapter 1: Introduction* | |
| | *A/ Main contents: (3 hours)* <br> **1. Theories:** *(3 hours)* <br> 1.1 Concept of statistics <br> 1.2 Objects of statistics <br> 1.3 Statistical methods <br> 1.4 Key statistical concepts | CLO1, CLO5 |
| | *B/ Self-study contents*: *(9 hours)* <br> Read a textbook and related materials related to chapter 1 | |
| 2,3 | *Chapter 2: Data collection* | |
| | *A/ Main contents: (5 hours)* <br> **1. Theories:** *(4 hours)* <br> 2.1 Types of data and their sources <br> 2.2 Sampling method <br> 2.3 Design of survey research <br> 2.4 Types of survey error <br> **2. Group discussion: 1 hour** <br> *Practice in designing questionnaire on the requested topic* | CLO1, CLO2, CLO3, CLO4, CLO5 |
| | *B/ Self-study contents*: *(15 hours)* <br> Read a textbook and related materials related to chapter 2 <br> Do homework of data colletion | |
| 3,4,5,6 | *Chapter 3: Presenting and organizing data* | |
| | *A/ Main contents: (8 hours)* <br> **1. Theories: 6** *(6 hours)* <br> 3.1 Organizing data <br> 3.2 Classification <br> 3.3 Presenting data <br> **2. Do exercise in class: 1 hour** <br> - Do exercise of synthetics, classification and presenting data <br> **3. Group practice: 1 hour** <br> Practice in synthetics, classification and presenting data by using Excel | CLO1, CLO2, CLO3, CLO4, |
| | *B/ Self-study contents*: *(24 hours)* <br> Read a textbook and related materials related to chapter 3 <br> Do homework of synthetics, classification and presenting data | |
| 6,7,8,9 | *Chapter 4: Statistics on the level of socio-economic phenomenon* | |

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| | **A/ Main contents**: *(9 hours)*<br>**1. Theories: 8** *hours*<br>4.1 Absolute number<br>4.2 Relative number<br>4.3 Measures of central tendency<br>4.4 Measures of variation<br>**2. Do exercise in class: 1 hour**<br>Do excercise on caculation statistical indicatiors | CLO1,<br>CLO2,<br>CLO3,<br>CLO4, |
| | **B/ Self-study contents**: *(27 hours)*<br>Read a textbook and related materials related to chapter 4<br>Do excercise on caculation statistical indicatiors | |
| 9,10 | *Chapter 5: Sampling methods* | CLO1,<br>CLO2,<br>CLO3,<br>CLO4, |
| | **A/ Main contents**: *(4 hours)*<br>**1. Theories: 3** *hours*<br>5.1 Theory and meanings of sampling methods<br>5.2 Order and the contents of sampling methods<br>**2. Do exercise in class: 1 hour**<br>Do exercise on sampling methods | |
| | **B/ Self-study contents**: *(15 hours)*<br>Read a textbook and related materials related to chapter 5<br>Do excercise on sampling methods | |
| 10,11,<br>12,13,<br>14 | *Chapter 6: Statistics on changes in socio-economic phenomena* | CLO1,<br>CLO2,<br>CLO3,<br>CLO4, |
| | **A/ Main contents**: *(11 hours)*<br>**1. Theories: 9** *hours*<br>6.1 Time series data<br>6.2 Index<br>**2. Do exercise in class: 2 hour**<br>Do exercise related to time series data and index | |
| | **B/ Self-study contents**: *(33 hours)*<br>Read a textbook and related materials related to chapter 6<br>Do exercise related to time series data and index | |
| 14 | *Chapter 7: Correlation analysis* | CLO1,<br>CLO2,<br>CLO3,<br>CLO4, |
| | **A/ Main contents**: *(5 hours)*<br>**1. Theories: 4** *hours*<br>7.1 Concept of correlation<br>7.2 Correlation of coefficient<br>7.3 Rank correlation of coefficient<br>7.4 Hypothesis testing of correlation coefficient<br>**2. Do exercise in class: 1hour**<br>Excercise of caculating correlation coefficient and hypothesis testing of correlation coefficient | |

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| | ***B/ Self-study contents***: *(15 hours)*<br>Read a textbook and related materials related to chapter 7<br>Excercise of caculating correlation coefficient and hypothesis testing of correlation coefficient | |