Institutions of Political Economy and Statistics

***Text under revision. Not yet approved by academic staff.***

Political Economy Module

Prof. Linda Arata

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The course aims to provide the basic elements of economic analysis, to allow students to interpret reality with the tools of economic science, at the level of individual economic agents (businesses, families, state). The course will allow students to develop an analytical vision of economic phenomena and to identify the economic relationships present in society. The course will also highlight the interaction between economic and non-economic phenomena of society, underlining the importance of considering, in economic analysis, aspects neglected by the mainstream economy. The expected learning outcomes are detailed as follows.

Knowledge and ability to understand

At the end of the course, students will be able to: 1. know the dynamics of the functioning of a market, 2. be aware of the benefits and limitations of the market 3. understand the determinants of consumer and producer decisions, 4. know what the multiple objectives of a company are and the way to achieve them, 5. recognise the market form of a sector and its peculiarities, 6. be aware of the relationship between happiness and income and the link between economy and relations, 7. understand the problem of common goods, 8. recognise the external aspects of a production process and identify the most suitable policy instruments to correct them, 9. understand the main similarities and the main differences between different economic paradigms.

Understanding and applying knowledge

At the end of the course, students will be able to recognise and interpret the economic dynamics that involve the market for goods and services, the different forms of market, and the characteristics of imperfect competition that exist in each market. Students will also be aware of the relevance of choices as a consumer and of the relationship between economic choices and the non-economic dimensions of life. Students will also be able to identify if a company is operating efficiently, and which actions and decisions of the company contribute to increasing the well-being of the community and which ones have an exclusively self-interested objective. Students will be aware of what common and public goods are, of their individual responsibility and of possible collective actions to preserve them. Finally, it is expected that students will be able to contribute to increasing public awareness of the presence of side effects and to discuss the most suitable tools to correct them.

Communication skills

At the end of the course, students will be able to appropriately use economic terms for describing and discussing economic phenomena.

COURSE CONTENT

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| --- | --- |
|  | ECTS |
| Course introduction |  |
| Definition of economics and its field of investigation  Resources and the problem of scarcity  Opportunity Cost  The functioning of a market economy  Two economic paradigms in comparison: political economy and civil economy | 0.5 |
| The functioning of markets: supply and demand |  |
| Fundamental concepts of supply and demand  Market balance  Elasticity of supply and demand and their use  Public intervention on the markets: taxes, subsidies, maximum and minimum prices | 1.0 |
| Benefits and limits of the market |  |
| Buyer surplus, seller surplus and mutual benefit  Market failures and the value of an asset | 0.25 |
| The theory of consumer behaviour |  |
| The rational behaviour of consumers: the concept of utility  The graphical approach to consumer theory: map of indifference, budget constraint, optimal choice of consumption  The measures of elasticity | 0.5 |
| Happiness and Income |  |
| The Easterlin paradox  Relational goods  Economic growth and relations | 0.25 |
| Production theory |  |
| The function of production, the average product and marginal product  The optimal input choice  Production costs in the short term  Production costs in the long term and economies of scale  The output quantity that maximises profit | 0.5 |
| Market theory |  |
| Market forms: perfect competition, monopoly, oligopoly and monopolistic competition | 0.5 |
| Corporate Social Responsibility |  |
| Stakeholders and objectives of a company  The declinations of Corporate Social Responsibility | 0.5 |
| Introduction to environmental economics |  |
| Side effects and environment  The optimal level of side effects  Policies to correct external effects  Common goods, the tragedy of common goods and possible answers | 1.0 |
| Tutorials | 1.0 |

READING LIST

Preferred text

Becchetti, L., Bruni, L., & Zamagni, S. (2014). Microeconomia: Un testo di economia civile. Il Mulino.

TEACHING METHOD

Frontal lectures (5 ECTS) will introduce and explain the theoretical concepts. At the end of each topical section, a selection of exercises (1 ECTS) will be carried out with the aim of improving students' understanding of the theoretical concepts and applying them to empirical cases. During each lecture, the lecturer will involve the class through questions to encourage interaction and discussion.

ASSESSMENT METHOD AND CRITERIA

A written test lasting approximately 120 minutes. The written test will involve answering two types of questions: theoretical questions and application questions.

The marks attributed to the individual questions may vary depending on the test. The assessment aims to provide a sufficiently precise measure of the student's overall level of preparation on the course programme followed, and to help the lecturer understand both the student's reasoning ability and his/her mastery of the methodological tools useful for interpreting economic phenomena.

Should a student pass the exam but decide to renounce their final mark, he/she must communicate this to the lecturer within five days of the mark's publication date.

NOTES AND PREREQUISITES

More precise indications on the programme details and parts of the texts that will be used will be provided during the course and made available on the course Blackboard page. Given the introductory nature of the course, students are not required to have any prior knowledge in economics. A basic knowledge of mathematics, however, is a requirement.

Information on office hours available on the teacher's personal page at http://docenti.unicatt.it/.

Statistics Module

Prof. Elena Castellari

COURSE AIMS AND INTENDED LEARNING OUTCOMES

The course aims to provide students with the theoretical knowledge and basic tools necessary for the presentation, description and processing of data, with particular attention to the analysis of relationships between phenomena and the role of inference. Upon passing the course, students are expected to know the basics of describing, statistically analysing, and interpreting data. Details of the intended outcomes are provided below:

Knowledge and ability to understand

At the end of the course, students will know the methodologies of sampling procedures and the descriptive analysis of experimental data; they will also be able to understand the value of the inferential process and know the materials and methods for processing random variables.

Understanding and applying knowledge

At the end of the course, students will be able to understand both descriptive and inferential statistical methods, and be able to apply them. Moreover, students will be able to understand the formulation and symbols used in statistical methodologies, and to apply them correctly.

Communication skills

At the end of the course, students will be able to use statistical data analysis methods appropriately as well as describe the methodology and results of the analysis appropriately.

COURSE CONTENT

|  |  |
| --- | --- |
|  | ECTS |
| Mono-variate descriptive statistics |  |
| Qualitative and quantitative data.  Frequency distribution, graphical representations and data presentation.  Centrality measures and variability measures. | 1.0 |
| Bivariate descriptive statistics |  |
| Double entry tables.  Independence, connection and association.  Dependence and correlation. | 0.5 |
| Probability and random variables |  |
| Probability.  Discrete and continuous random variables.  Binomial distributions and normal distributions. | 1.0 |
| Inferential statistics |  |
| Estimates and estimators.  Confidence Intervals.  Statistical tests.  Sampling distributions. | 1.0 |
| Inference on one or two populations |  |
| Tests and confidence intervals on the mean/the difference between means.  Variance tests and confidence intervals.  Tests and confidence intervals on proportions. | 1.5 |
| Tutorials | 1.0 |

READING LIST

Main reference texts:

MK Pelosi-TM Sandifer-P. Cerchiello-P. Giudici, *Introduzione alla statistica,* McGraw-Hill Companies, Milan, 2009.

Other reference texts:

M.M. Triola-M.F. Triola, *Statistica per le discipline bio-sanitarie,* Pearson Paravia Bruno Mondadori, Milan, 2009.

S. Borra-A. Di Ciaccio, “*Statistica:* *metodologie per le scienze economiche e sociali*” McGraw-Hill Education, Milan, 2014.

F. Mecatti, "*Statistica di base”,* McGraw-Hill Education, Milan, 2009.

SM IACUS, *“Statistica”,* McGraw-Hill Education, Milan, 2010.

TEACHING METHOD

The module provides 5 ECTS (40 hours) of classroom lectures aimed to illustrate the methods and applications of the data analysis process. During lectures, the theoretical notions will also be taught with the help of practical examples in order to highlight the applicative nature of the subject matter. The course also includes 12 hours of tutorials (1 ECTS), in which some applications of the notions acquired during lectures will be presented. The ability to solve exercises is essential for passing the exam.

ASSESSMENT METHOD AND CRITERIA

Students will be assessed through the outcome of a written test lasting 120 minutes, which will be held at the end of the course on the dates established by the calendar. The written test will consist of questions covering the course contents. The solving of exercises similar to those in the test will be predominantly addressed during the tutorials. Likewise, the theoretical questions will be focused on during the lectures.

The marks attributed to the individual questions may vary depending on the test. Each part of the programme will contribute to the overall mark with the following percentages: 20% descriptive statistics, 25% random variables and probabilities, 50% inferential statistics and inference on one or two populations. The assessment aims to provide a sufficiently precise measure of the student's overall level of preparation on the course programme followed, and to verify that they are very familiar with applying the theoretical notions to the resolution of practical exercises. The material required for the exam (such as statistical tables, a formulary, etc.) will be provided to the student by the exam commission. Each student is asked to present himself in the classroom with a calculator, pen and identification document. During the exam, the use of any other electronic instrument (mobile phones, tablets, etc.) or educational material is prohibited; doing so will see the involved student's test being cancelled. Likewise, it is forbidden to communicate, in any way, with persons other than the examination committee; doing so will see the involved student's test being cancelled.

In exceptional cases the lecturer may use an oral interview to verify or supplement the mark achieved in the written test. Use of the oral test is at the lecturer's discretion and cannot be requested by the student.

NOTES AND PREREQUISITES

More precise indications on the programme details and parts of the texts that will be used will be provided during the course and made available on the course Blackboard platform. Given the introductory nature of the course, students are not required to have any prior knowledge for understanding the material in class, except for the basic notions of mathematics. Regular attendance at lectures and tutorials is recommended in order to achieve the course aims.

Information on office hours available on the teacher's personal page at http://docenti.unicatt.it/.