Fakultät für Wirtschaftswissenschaften
Facoltà di Economia
Faculty of Economics and Management

Bachelor in Economics, Politics and Ethics (L-33)
Course contents

1st year – both curricula
Microeconomics • Thinking Like An Economist • Economic Methods • Optimization • Demand, Supply and Equilibrium • Consumers and Incentives • Sellers and Incentives • Perfect Competition • Trade • Externalities and Public Goods • Taxation and Regulation • Markets for Factors of Production • Monopoly • Game Theory • Oligopoly and Monopolistic Competition • Time and Risk • Information • Auctions and Bargaining • Social Economics • Political Economics
Macroeconomics • Introduction to Macroeconomics • Measuring the Macroeconomy • An Overview of Long-Run Growth • A Model of Production • The Solow Growth Model • Growth and Ideas (Romer Model) • Inflation • The Goods Market • Financial Markets • The IS-LM Model • The Supply-Side of the Short-Run Model • The Three-Equation Model and Macroeconomic Policy • Expectations • Markets, Prices, Supply and Demand • Consumption, Saving and Investment • An Equilibrium Real Business Cycle Model • Inflation, Money Growth and Interest Rates • Government Expenditure • Public Debt

Mathematics for EPE

M1 – Mathematics A for EPE

- Sets and operations with them. Sets of numbers: natural, integer, rational, real, irrational. The decimal system. Intervals and their classification. Venn diagrams.
- Statements. Arrows: implication and equivalence. Necessary and sufficient conditions. A numerical function: domain, range. The *xy* plane: the Cartesian coordinates and the distance between two points. The graph of a function. The equation of a circle.
- A curve in the xy plane. The absolute value. A linear function and its graph. The slope and intercept of a non-vertical straight line in the *xy* plane. The equation of a straight line through two given points and the point-slope equation of a straight line. The general equation of a straight line in the *xy*-plane. Linear inequalities and their solutions as sets in the *xy*-plane.
- The budget set. A quadratic function and its graph. A polynomial of degree n. Division of polynomials. The remainder theorem. The maximum number of real roots of a polynomial of degree n. A rational function; proper and improper rational functions.
- A power function, its graph and properties. The *n*-th root of $a>0$. An exponential function (with base $a>0$, $a\neq 1$). A mapping. A one-to-one and a many-to-one mapping. The inverse mapping. The limit of a function, one-sided limits.
- Properties of limits: the limit of a sum, a product, a ration and a power. Horizontal asymptotes. An infinite sequence and its limit. A finite geometric series and its sum. An infinite geometric series and its sum. A continuous function.
- One sided continuity. A function continuous in an interval. Properties of continuous functions: continuity of a sum, a product, a ration and a power of continuous functions. Composite functions. Continuity of a superposition of two continuous functions. Extreme values and points of a function. The extreme value theorem and its implications.
- The slope of a curve at a point, the derivative, the tangent (line). One sided derivatives. A differentiable function in a set. Are continuity and differentiability related? The graph of $y=|x|$. Rules of differentiation: the derivative of a sum, a product and a ratio. The chain rule.
- The graph and the derivative of an exponential function. The number *e* and the natural exponential function. The natural logarithmic function and its properties. Monotone functions. The graph and the derivative of the inverse function. (Theorem on inverse functions.) The derivative of the natural logarithmic function.
- The logarithmic function to base *a* and its relation to the natural one. The logarithmic differentiation. A characterization of the number *e*. The Fermat theorem. Stationary points. The mean value theorem. A geometric interpretation of the Fermat theorem and the mean value theorem. Criteria of monotonicity in terms of the first derivative.
- Indeterminate forms. L'Hopital's rule. Higher order derivatives. Continuously differentiable functions. Approximation of functions with polynomials. The linear and the quadratic approximation at a point. The Taylor polynomial of degree *n*. The Taylor polynomial of degree *n* for the natural exponential function. The remainder term and its interpretation.
- Global and local extreme values and points. One-dimensional optimization. A first order (sufficient) condition of extremum. A second order (sufficient) condition of extremum. A second order necessary condition of extremum. Convex and concave functions (in terms of the second derivative). An inflection point.
- The area under a curve and indefinite integrals. Rules of indefinite integration: the integral of a linear combination, a power and an exponential function.
- The definite integral and its properties.

- Areas as definite integrals. The definite integral as a differentiable function of the limits of integration.
- Integration by parts.
- Integration by substitution.
- Improper integrals with infinite limits of integration.

M2 – Mathematics B for EPE

- A function of several variables and its domain. A Cobb -- Douglas production function. Continuity of a function of several variables. The partial derivatives. Young's theorem.
- Continuously differentiable and k times continuously differentiable functions of two variables in a domain. A neighborhood in R^2. A cone in R^2. A homogeneous function of degree k. A quadratic form in two variables.
- Vectors and operations with them. The gradient. Geometric vectors. A linear combination of vectors. Geometric interpretation of vector addition and subtraction.
- The scalar product. Orthogonal and parallel vectors. Equations of a straight line: through two given points; through a given point and parallel to a given vector. The Euclidean norm. The Cauchy -- Schwarz inequality.
- The general equation of a plane in R^3. The plane spanned by two nonparallel vectors in R^3.
- Matrices and operations with them. The inverse, the transpose, a symmetric matrix, the identity matrix. The Hessian.
- The main diagonal and the trace of a matrix. Systems of linear equations. The elimination method for systems of two linear equations with two unknowns and the determinant of a 2×2 matrix, Cramer's rule and its implications.
- The chain rule for a function of several variables. The total derivative. The first and the second directional derivative of a function of two variables.
- The linear and the quadratic approximations to a function of two variables. The tangent plane.
- An implicit function. The derivative of a function given implicitly. The implicit function theorem.
- A level curve and its interpretation. The gradient at a point on a level curve and its properties. Maximum (minimum) values and points of a function of two variables and necessary conditions of optimality.
- A vector representation of the first order conditions of extreme points. A stationary point. Local extreme values and points.
- Definiteness of a quadratic form in two variables. Classification of stationary points of a function of two variables. A saddle point.
- Convex sets in R^2. The intersection of two convex sets in R^2. Convex and concave twice differentiable functions defined in R^2: the second derivative test for convexity and the second derivative test for strict convexity. A linear combination with non-negative coefficients of two convex functions.
- Convexity of a superposition of convex functions. Sufficient conditions for global extreme points. Constrained optimization. The Lagrangian method. The Lagrange's theorem.
- An economic interpretation of the Lagrange multiplier. A shadow price. An approximation to the optimal value based on the Lagrange multiplier. A cost minimization problem and its solution by the Lagrangian method.
- Global sufficiency for the Lagrangian (multiplier) method. Nonlinear programming. The feasible set.
- The Kuhn -- Tucker conditions. The complementary slackness condition. Sufficient conditions for a nonlinear programming problem.

Comparative Politics

- What is comparative politics and how to study it**:** this first part explains the relevance of the discipline together with the main theoretical approaches and methods used in comparative politics.
- Lessons from the history and beyond: this part of the course is dedicated to understanding the origin of the nation-state, the type of polities and regimes, focusing on democracies (meaning and types of democracy), and authoritarian states.
- Political structures and institutions: this part of the course provides notions on legislatures, governments, and bureaucracies, constitutional rights and judicial power, elections, and referenda with a focus on the multilevel structure of the European Union.
- Who is in there and how it works: this part of the course is dedicated to understanding parties and party systems but also interest groups, social movements, and other relevant actors of politics.
- Culture, communication, and participation: this section of the course focuses on ideas, attitudes, political participation, and communication (with a special focus on populism and Euroscepticism).
- Comparative political outcomes: this last section of the course is dedicated to the output and outcome of politics with a focus on policies and policy change.

Principles of Philosophy 1

- The inception of thinking and metaphysics
- The scope of a metaphysical position
- The problem of truth
- The essence of man
- The structure of scientific knowledge
- The relation of philosophy, science and art
- Fundamental ethics and original economics
- The transition from ancient to modern philosophy
- The problem of method

Business Administration

- Classification of Business Administration/Management
- Organization theories: Basic understanding and tasks of companies, entrepreneurs and other forms of organizations
- The role of the organization in its environment (e.g. stakeholders and interaction)
- Strategic management: strategy types and strategy process
- Market-oriented management.
- Innovation, intrapreneurship and creativity
- Organizational change
- Organizational culture
- Management concepts and management styles
- Platform management

History of Economic Thought

- Ideas, Concepts and Reality: An Introduction to the History of Economic Thought
- Economics before Economics: The Preclassical Age

- The Beginning of Modern Economic Thought: Adam Smith and the others
- Classical Economics: Malthus and Ricardo
- New Directions: Karl Marx and His Critique of Classical Economics (and of Capitalism)
- Jevons, Menger, Walras, Pareto, Marshall: Marginal Revolution and Neoclassical Economics
- Pioneers of Macroeconomics: Fisher and Schumpeter
- Fine Theory and Policy Proposals for a Complex Reality: Keynes and Friedman
- Tendencies in Contemporary Economic Thought

English as a Foreign Language - Specialized Language course

- Language and grammar
  - General overview of specialised grammar at the C1 level (colligation / tenses)
  - Introduction to specialised lexicogrammar (collocation)
  - specific language for describing, comparing and commenting on economic, business and financial information
- Reading skills – skimming, scanning, intensive and extensive reading, increasing reading speed
- Writing skills
  - awareness of and ability to use different registers including choice of appropriate language (lexis and grammar)
  - report writing: paragraphing, cohesion
  - report writing: describing and comparing visual data
  - report writing: analysing and giving explanations for trends in visual data
- Speaking skills
  - talking about personal experiences and interests
  - talking about a wide range of familiar subjects
  - talking about unfamiliar topics
  - talking about subject-specific topics in a short discussion

Italian as a Foreign Language - Specialized Language course

- Language for specific purposes: economics and laws
- Subjonctive;
- Conditional forms and uses
- Italian syntax
  Specialized texts

German as a Foreign Language - Specialized Language course

The course focuses on styles of language used in the field of economics, politics and philosophy and aims to improve the students' receptive, but above all, productive language skills in general.
Topics covered include an introduction to grammatical structures used in this field and at this level, with subsequent consolidation through the use of practical applications. There will also be emphasis on improving productive skills.

- Reading / listening and comprehending authentic texts taken from a university environment and concerning economics and other more general topics in German;
- Writing clearly with appropriate register and style;
- Organizing and giving a short professionally acceptable presentation on a topic connected to economics, politics and philosophy.

Topics:

- Study and university environment

- Environment
- Life and culture
- Economics, politics and philosophy

Information Systems and Data Management

Part 1– Information Systems

- Data, information, and knowledge
- What is knowledge and how it is managed
- Data representation: numbers, texts, images, sound and video
- Types of computers
- Software, Operating systems and application software
- Graphical user interface
- Virtualization
- Software licenses
- Network: technical aspects, Servers, clients, and peers and network types
- World Wide Web
- Search engines
- How e-mail works
- The certified e-mail (PEC – Posta Elettronica Certificata)
- Other relevant services on the Internet

Part 2 – Data Management

- Type of Data
- File organization and associated problems
- Relational Databases
- Data Analysis and Databases
- Business Intelligence
- Data Warehouse and Data Marts
- OLAP tools
- Data Analysis tools - Data Mining
- Techniques for Data Augmentation

2nd year – both curricula

Statistics for EPE

- Classifications of variables, data types and exploratory data analysis
- Introduction to probability: definitions, conditional probability and independence, Bayes' theorem, random variables, expected value and variance, probability models for discrete and continuous random variables, central limit theorem
- Principles of statistical inference: sampling distributions, estimators and their properties, point estimation, confidence intervals, and hypothesis tests
- Correlation, dependence and linear regression model
- Statistical programming with R software

European and Public Law

M1 Public Law and Fundamental Rights

- Main public law concepts (law, norms, and their relationships; State; forms of State and forms of government): who creates rights and duties? How did they evolve?
- Sources of law: which legal force?
- Fundamental rights and their multilevel protection (the State, the EU and the Council of Europe)
- Federalism and Regionalism

M2 European Law

- Historical context of European Integration
- Organs of the EU
- Sources of EU law
- Characteristics of EU law
- Legal aspects of the internal market /fundamental freedoms
- Current issues in EU Law

Principles of Philosophy 2

- The unfolding of modern philosophy
- The constitution of the modern subject
- Doubt and the notion of truth as certainty
- The constitution of the objectivity of the object
- The metaphysical concept of optimality
- The original economic harmony as the best of all worlds
- Metaphysical and operative concept of value
- Perspectivism as the structure of reality
- Nihilism
- The overall economic management of the earth
- The end of philosophy and the future scope of thinking

Data Science for Social Sciences

- Dimensionality reduction techniques: principal component analysis and factor analysis
- Unsupervised learning: distance-based and model-based clustering
- Time series analysis and forecasting
- Model validation and re-sampling
- Quantitative textual data analysis
- Applications with the software R and the programing language Python

Growth and Development Economics

- Capital fundamentalists
- Neoclassical models
- Market failures and development
- Geography
- The natural resource curse
- Institutions
- Corruption
- The role of agriculture
- Urbanization and migration
- Microfinance

- Debt and aid

Public Economics

- Introduction
- Review of Basic Microeconomic and Empirical Tools
- Education
- Social Insurance
- Social Security
- Unemployment
- Disability and Injury Insurance
- Health Insurance
- Income Distribution and Welfare Programs
- Taxation
- Political Economy
- Theory of Externalities
- Externality Problems and Solutions
- Dynamic Efficiency
- Sustainability
- Sustainable Resource Use
- Public Goods

Applied Econometrics

- Linear Regression with a Single Regressor: estimation, hypothesis testing and confidence intervals.
- Linear Regression with Multiple Regressors
- Hypothesis Tests and Confidence Intervals in Multiple Regression
- Special Topics: Endogeneity and Heteroskedasticity
- Introduction into Time Series and Panel Data Econometrics

Econometrics

- Linear Regression
- Hypothesis Tests and Confidence Intervals in Linear Regression Models
- Forecasting
- Heteroscedasticty and Autocorrelation
- Regression with Panel Data (Advantages and limitations of fixed and random effects regression)
- Regression with a Binary Dependent Variable, Categorical data analysis
- Introduction to Bayesian inference

Introduction to academic writing

- Characteristics of Academic Writing
- Academic Writing: "what" and "where"
- The main sections of an academic paper
- The writing process
- The Title
- The Abstract section
- Different types of Abstract

- The "Introduction" section
- Defining the scope and the CARS models
- Middle sections: "methods", "results" and "discussion"
- The "Methods" section: writing details
- The "Results" section: writing details
- The "Discussion" section: writing details
- How to use illustrations, tables and attachments
- The endings sections
- The "Conclusions" section
- The "References" section: the different citation styles
- In-text citations and respective formatting styles
- Challenges of writing in British vs American English
- Punctuation
- Components of academic writing: clause, phrase, sentence
- Organising paragraphs
- Synonyms and verbs in academic writing
- Adverbs in academic writing
- Plagiarism: what is and how to avoid it
- Summarizing vs paraphrasing
- Making and organizing notes
- Rewriting and proofreading

- Academic writing in quantitative methods, law, politics, and philosophy

English as a Foreign Language – Advanced Specialized Language course

- Language and grammar
  - consolidation of specialised grammar at the C1 level (colligation / tenses)
  - development of specialised lexicogrammar (collocation / appropriacy / corpus investigations)
  - specific language for describing, comparing and analysing economic and political topics
- Reading skills
  - detailed comprehension
  - critical thinking
  - identifying logical connections
  - inference
- Writing skills
  - further development on the use of formal academic language (lexis and grammar)
  - report writing: paragraphing, cohesion and coherence
  - report writing: analysing economic / social / political problems and providing solutions / giving recommendations
- Speaking skills
  - development and practice of using a wide range of vocabulary to give and exchange views on familiar and unfamiliar subjects
  - development and practice of using a wide range of vocabulary to give and exchange views on subject-specific topics (economic / social / political)
  - practice in developing fluency and interacting with ease in academic contexts (seminars and tutorials)

Italian as a Foreign Language – Advanced Specialized Language course

- Academic Italian Language
- Language for specific purposes: law and economics
- Semantics
- Italian advanced Syntax

German as a Foreign Language – Advanced Specialized Language course

The course focuses on the various styles of language used in the field of economics, politics, philosophy and business studies and aims to improve the students' receptive, but above all, productive language skills.
Topics covered include an introduction to more complex grammatical structures used in this field and at this level, with subsequent consolidation through the use of practical applications. There will also be emphasis on improving productive skills, especially writing skills, so that the students can produce accurate, cohesive texts in German for professional use.
This course also aims to prepare the students to sit the TestDaF exam at C1 level.

- Reading / listening and comprehending authentic texts taken from a university environment and concerning economics and other more specific topics in German;
- Writing texts on economics and BA-programme-related topics clearly, concisely and accurately with appropriate register and style;
- Listening to oral texts produced for academic and/or professional purposes (e.g. interviews, lectures, etc.)
- Organizing and conducting a job interview.

Topics:

- Research and science
- New technologies
- Politics and philosophy
- Economics: Job profiles, Companies (Organization, Presentation, Corporate Identity;
- Academic writing
- Preparation for the TestDaF certificate
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3rd year – Curriculum "Politics and Ethics"

Nature and Society

- The human nature
- Between the laws of nature and the law of freedom
- The overcoming of nature through society
- Philosophical foundations of natural and social sciences
- Ecological balance, social justice, economic stability
- Ethics of environmental governance
- Physis, natura, environment
- Polis, civitas, society
- The cybernetic conception of nature and society
- Utopian thought

Economic Policy and Institutions

- The foundations of economic policy
- Empirical tools for the analysis and evaluation of public policies

- Budgetary institutions and policies
- Monetary institutions and policies
- Exchange rate institutions and policies

Environmental and Resource Economics

Environmental Economics

- micro- and game-theoretical foundations
- economics and the environment
- theory of external effects and public goods
- Coase theorem and negotiated solutions
- overview of environmental policy instruments and criteria for evaluating them
- conditionality policy
- taxes and tradable certificates
- international aspects of environmental economics
- behavioral economic aspects of environmental economics

Resource Economics

- dynamic efficiency and sustainability
- non-renewable resources
- transformation to renewable resources, recyclable resources
- water, land, and forest resources
- common-pool resources
- sustainable economic development

Responsible and transformative decision making

- Distinctive traits of decision making
- Responsibility as an element of ethical decisions
- Transformative research
- The conceptualisation of new paradigms
- The condition of risk, incalculability, uncertainty, instability
- Critical thinking
- Deciding, judging, assessing, evaluating
- Responsible decisions in the age of artificial intelligence
- Ethical implications of economic responsibility
- Ethics of responsibility and ethics of conviction
- The state of responsibility, responsiveness, accountability
- Categorical, hypothetical, and systemic imperatives

Political Theory

- The distinction between empirical and normative
- The public sphere. Origins and decline of a format for political participation
- Authority: the normative dimension of authority and contemporary debates.
- Freedom
- Toleration: historical origins of an idea
- Citizenship
- Multicultural citizenship
- Democracy
- Dictatorship an dictatorships: typological distinctions and normative puzzles

Italian and European Economic Law

- Theory of Regulation
- Efficiency
- Market Failures
- Costs and Benefits Analysis
- The Internal Market
- The Antitrust Discipline
- The State Aids
- The Monetary Union
- Public Services

3rd year – Curriculum "Economics"

Political Economics

- The role of institutions
- Institutions in non-democratic settings
- Institutional reform
- International politics
- Conflicts
- Electoral frauds
- Vote coercion
- Organised crime
- The role of media on elections

Economic Policy: Theory and Practice

- The rationale for public (and private) intervention in the economy: the allocative efficiency criterion, strengths and weaknesses
- Competition policy: game theory, oligopolistic competition, relevant market, market power, collusion, horizontal mergers, antitrust interventions in traditional and digital markets
- Asymmetric information: principal-agent model, adverse selection, moral hazard, microcredit.
- Macroeconomic policies: fiscal and monetary policy (quantitative easing, helicopter money, specific interventions in the time of Covid-19 and in the time of war)

International Economics

- Ricardo model
- Resources, comparative advantage, and income distribution – Heckscher-Ohlin model
- Specific factors model
- Standard trade model
- Economies of Scale, imperfect competition, and international trade
- Summary: trade theory
- Trade policy and its instruments
- Balance of payments and national accounting
- Foreign exchange market and elasticity approach
- Gross domestic product and trade balance
- Expenditure and exchange rate in the Keynesian model
- Mundell-Fleming model

- Purchasing power parity theory and interest parity theory
- Monetary exchange rate model (flex price model)
- Exchange rate overshooting (Dornbusch model)

Labor Economics

- Introduction
- Review of Empirical Methods
- Labor Supply
- Labor Demand
- Labor Market Equilibrium
- Human Capital
- Labor Unions
- Incentive Pay
- Unemployment
- Social Interactions
- Labor Market Discrimination
- Inequality
- Labor Mobility
- Immigration
- Household Economics
- Work, Family and Child Development

Financial Markets and Institutions for EPE

- Principles of financial economics
- Financial firms: institutional vs functional approach
- Asset pricing theory and market efficiency
- Non-financial firms: cost of capital and investment decisions
- Introduction to derivatives markets: forward, futures and options

Italian and European Banking and Financial Law

- Sources of banking and financial law
- Banking activity and governance
- Controls and supervision of banks
- Financial Intermediaries
- Supervision of intermediaries
- Financial instruments and services
- Collective management of saving
- Organization of financial services and activities