MINISTRY OF EDUCATION AND RESEARCH
Approved starting with the 2025-2026 academic year

UNIVERSITY OF CRAIOVA
EUGENIU CARADA DOCTORAL SCHOOL OF ECONOMIC SCIENCES
Doctoral Field: CYBERNETICS AND STATISTICS
Duration of studies: 4 years
Mode of study: full-time / part-time
Study program credits (ECTS): 240

CURRICULUM PLAN

CONTENT OF THE CURRICULUM					
I. ADVANCED UNIVERSITY TRAINING PROGRAM (PPUA)					
YEAR I, SEMESTER I	Assessment	Grading	Hours		Credits
			C	S	
Mandatory subjects					
Subject 1: Ethics and academic integrity	Exam	Grade	2	1	10
Optional subjects					
Subject 2:* 1. Statistical and Econometric Modeling of Economic Processes 2. Interdisciplinary Research Methods in Economic Sciences 3. Quantitative Research Based on Software Tools and AI	Exam	Grade	2	1	10
Subject 3:* 1. Quality Management of Research Activities 2. Research Project Management 3. Methods and Techniques of Economic Analysis 4. Financial Systems and Markets 5. Advanced Econometrics Techniques 6. Sustainability in Economic Research	Exam	Grade	2	1	10

**Depending on the research topic, the PhD supervisor selects one subject from each package for each doctoral student. A course is scheduled only for cohorts with at least 5 students in the first year of study.*					
TOTAL PPUA					30
II. SCIENTIFIC RESEARCH PROGRAM					
YEAR I, SEMESTER II					
1. Presentation of the Progress of the Scientific Research Program (Scientific Research Report R1)	Exam	Assessment	-	-	30
TOTAL CREDITS YEAR I					60
YEAR II, SEMESTER I					
1. Dissemination of Scientific Research Results 1 *Participation in international conferences in the field, proved by the Conference Program / 10 credits per international conference*	Evaluation Test	Assessment	-	-	20
2. Dissemination of Scientific Research Results 2 *Scientific publications in journals indexed in at least three international databases or ranked in Web of Science, where the PhD student is the sole author, first author, or corresponding author; from domestic journals – 10 credits / from international journals – 15 credits per published article*	Evaluation Test	Assessment	-	-	10
YEAR II, SEMESTER II					
3. Presentation of the Progress of the Scientific Research Program (Scientific Research Report – R2)	Evaluation Test	Assessment	-	-	30
TOTAL CREDITS YEAR II					60
YEAR III, SEMESTER I					
1. Dissemination of Scientific Research Results 3 *Participation in international conferences in the field, proved by the Conference Program / 10 credits per international conference*	Evaluation Test	Assessment	-	-	10
2. Dissemination of Scientific Research Results 4 *Scientific publications in journals indexed in at least three international databases or ranked in Web of Science, where the PhD student is the sole*	Evaluation Test	Assessment	-	-	20

author, first author, or corresponding author; from domestic journals – 10 credits / from international journals – 15 credits per published article					
YEAR III, SEMESTER II					
3. Presentation of the Progress of the Scientific Research Program (Scientific Research Report – R3)	Exam	Assessment	-	-	30
TOTAL CREDITS YEAR III					60
YEAR IV, SEMESTER I					
1. Presentation of the Progress of the Scientific Research Program (Scientific Research Report – R4)					30
YEAR IV, SEMESTER II					
2. Evaluation and defense of the thesis before the academic guidance and integrity committee					30
TOTAL CREDITS YEAR IV					60
TOTAL CREDITS YEARS I - IV					**240**

Notes:

The evaluation of all activities included in the Curriculum Plan is carried out only during the assessment sessions scheduled in the Structure of the Doctoral Academic Year.

For the award of the PhD degree, the following minimum standards regarding the dissemination of doctoral research results on the thesis topic (conference participation and article publication) must be met, in accordance with the provisions of OME 3018/13.01.2025:

1. *Publication of at least three articles in scientific journals indexed in at least three international databases or ranked in Web of Science, of which, for one article, the PhD student must be the sole author, first author, or corresponding author.*
2. *Presentation of at least three scientific papers at international conferences in the field, evidenced by the conference program.*

RECTOR,
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HIS EMINENCE Prof. IRINEU ION POPA, PhD

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Annex to the Curriculum Plan

COMPETENCES AND EXPECTED LEARNING OUTCOMES DEVELOPED WITHIN THE DOCTORAL PROGRAM IN ECONOMICS

A. COMPETENCES[1]

a) **Key-Competences:**

- The competences acquired upon completion of the doctoral studies correspond to those associated with Level 8 qualifications of the EQF/CEC and the CNC.
- Doctoral programs ensure the development of professional competences (subject-specific, cognitive, and research-related) in specialized fields, as well as transversal competences.

b) Professional Competences[2]:

CP1. Advanced knowledge in the field;
CP2. The ability to identify, formulate, and solve research problems in a creative manner;
CP3. Mastery of advanced research methods and techniques;
CP4. Knowledge of research project management;
CP5. Mastery of new procedures and solutions in research;
CP6. Skills in documenting and exploiting scientific works;
CP7. Ability to write scientific papers and other academic materials at an advanced level, in a style appropriate to the field of study, while adhering to its national and international standards;
CP8. Ability to process and analyze data at an advanced level, including through the use of specialized software, depending on the field;
CP9. Academic-level language skills in international languages necessary for documenting and preparing scientific papers;
CP10. Understanding and ability to apply the principles and values of research ethics in the respective field.

[1] *Competence* is the demonstrated ability to use knowledge, skills, and personal, social, and/or methodological abilities in work or study situations for professional and personal development (According to Law no. 199/2023 on Higher Education, as amended and supplemented). Competences (according to OME 6768/2023 for the approval of the Methodology for awarding transferable credits in lifelong learning) are defined in correlation with ESCO qualifications established for each study program, qualifications registered in RNCIS

[2] According to ORDER No. 3020/2024 of January 8, 2024, for the approval of the Framework regulation on doctoral university studies

c) Transversal Competences[3]:

CT1. Advanced written and oral communication skills in the field of science;

CT2. Advanced linguistic skills in widely spoken international languages, including the ability to express and formulate ideas in multicultural and multilingual contexts;

CT3. Advanced digital skills and competencies, as part of social-level digital transformation, including through the use of artificial intelligence;

CT4. Interpersonal and teamwork skills;

CT5. Knowledge of human, material, and financial resource management;

CT6. Knowledge of career management, as well as proficiency in job-search techniques and in creating employment opportunities for others;

CT7. Knowledge of risk, crisis, and failure management;

CT8. Knowledge of critical thinking, including the ability to analyze, interpret, and formulate reasoning in various contexts;

CT9. Knowledge of the application of legislation in the field of intellectual property rights;

CT10. Ability to innovate and mastery of concepts related to economic, technological, and social entrepreneurship;

CT11. Designing and conducting original research based on advanced methods that lead to the development of scientific and technological knowledge and/or research methodologies;

B. LEARNING OUTCOMES

The primary purpose of doctoral studies is the development of **a competent human resource capable of conducting scientific research**. At the same time, doctoral training meets the diverse demands of the labor market, covering not only the higher education sector but also other fields of activity.

Learning outcomes are statements describing what a doctoral student knows, understands, and is able to do upon completing a learning pathway. They are defined in terms of knowledge, skills/aptitudes, responsibility, and autonomy. The expected learning outcomes are established at the IOSUD level for doctoral fields of study, in correlation with the professional and transversal competencies specified in **Article 7**, paragraphs (9) and (10) of ***Order 3020/2024***.

[3] According to ORDER No. 3020/2024 of 8 January 2024 for the approval of the Framework Regulation regarding university doctoral studies

In the case of university doctoral study programs, the learning outcomes are aligned with **Level 8 of the National Qualifications Framework (CNC),** as follows:

Level CNC	Knowledge	Skills	Responsibility and Autonomy
Level 8	Knowledge at the most advanced level in a field of work or study, as well as knowledge at the interface between different fields	The most advanced and specialized skills and techniques, including the ability to synthesize and evaluate, required for solving critical research and/or innovation problems and for expanding and redefining existing knowledge or professional practices	Demonstration of a high level of authority, innovation, autonomy, scientific and professional integrity, and sustained commitment to the development of new ideas or processes at the forefront of a work or study context, including research

No.	Knowledge	Skills	Responsibility and Autonomy	Course / Activity
1.	C1. Has a deep understanding of the fundamental and emerging paradigms and theories in the field of cybernetics and statistics.	A1. Designs and conducts rigorous scientific research using methodologies appropriate to the investigated problems.	RA1. Conducts original research independently, demonstrating initiative and scientific responsibility.	- Statistical and Econometric Modeling of Economic Processes - Interdisciplinary Research Methods in Economic Sciences - Quantitative Research Based on Software Tools and AI - Dissemination of Scientific Research Results - Preparation and Presentation of Research Reports
2.	C2. Knows in detail the quantitative and qualitative methods used in applied scientific research in economic sciences. Identifies the role of cybernetics and statistics in the analysis of economic	A2. Competently applies statistical tools and analysis software (SPSS, R, Stata, EViews, SmartPLS, etc.) in scientific research. Develops practices regarding the	RA2. Contributes to the advancement of scientific knowledge in cybernetics and statistics through impact works and scientific collaborations. Scientifically substantiates decisions based on the use of statistical-econometric modeling	- Statistical and Econometric Modeling of Economic Processes - Interdisciplinary Research Methods in Economic Sciences - Quantitative Research Based on Software Tools and AI - Dissemination of Scientific Research Results

	and social phenomena, applies quantitative techniques for optimal decisions in economic and social systems, applies statistical and econometric methods in the analysis of economic and social phenomena.	application of specific techniques and tools for carrying out economic-financial analyses and predictions and regarding the application of quantitative methods for data analysis by testing and interpreting econometric models.	tools, estimation of expected results and optimization of result indicators. Demonstrates responsibility in ensuring the accuracy and integrity of statistical data, applying validation and verification techniques, works autonomously in the interpretation and analysis of statistical data, contributing to informed decision-making within the organization, organizes, documents and archives the collected data, ensuring their accessibility and correctness for subsequent use, demonstrates autonomy in analyzing the role of cybernetics and statistics in studying economic phenomena and its use in micro and macroeconomic decisions, applies statistical-econometric methods at the macroeconomic level, being able to deepen and autonomously apply relevant concepts and analyses in economics, correctly formulates economic problems and explains key indicators of resources and	- Preparation and Presentation of Research Reports

			results at the macroeconomic level, demonstrating responsibility in the analysis.	
3.	C3. Master key concepts related to cybernetics/statistics and econometrics.	A3. Critically evaluates the specialized literature and identifies new relevant research directions.	RA3. Takes responsibility for the quality and relevance of the research conducted.	- Statistical and Econometric Modeling of Economic Processes - Dissemination of Scientific Research Results - Preparation and Presentation of Research Reports
4.	C4. Has knowledge of the procedures for writing, publishing, and peer-reviewing scientific papers in indexed journals.	A4.1. Logically, coherently, and rigorously argues scientific hypotheses and interprets research results. A4.2. Prepares original scientific papers with potential for publication in international specialized journals.	RA4. Actively participates in the academic community through the publication of scientific papers, organization of scientific events, and mentoring.	- Statistical and Econometric Modeling of Economic Processes - Interdisciplinary Research Methods in Economic Sciences - Quantitative Research Based on Software Tools and AI - Ethics and Academic Integrity - Dissemination of Scientific Research Results - Preparation and Presentation of Research Reports
5.	C5. Understands the role and impact of scientific research in economics, society, and organizational development.	A5. Presents and publicly defends research results in international academic contexts (conferences, seminars).	RA5. Coordinates scientific dissemination activities among specialists, students, and the general public.	- Quality Management of Research Activities - Research Project Management - Methods and Techniques of Economic Analysis - Financial Systems and Markets - Advanced Econometrics Techniques - Sustainability in Economic Research - Dissemination of Scientific Research Results

				- Preparation and Presentation of Research Reports
6.	C6. Has knowledge of the fundamentals of research policies and international strategies in the field of economic sciences.	A6. Applies advanced research project management skills, including planning, budgeting, and reporting.	RA6. Demonstrates professional autonomy in decision-making related to methodology, data analysis, and interpretation.	- Quality Management of Research Activities - Research Project Management - Methods and Techniques of Economic Analysis - Financial Systems and Markets - Advanced Econometrics Techniques - Sustainability in Economic Research
7.	C7. Understands the norms of ethics and academic integrity, including the legal and professional aspects of research.	A7. Manages research data ethically and professionally, including confidentiality, consent, and data validity.	RA7.1. Adheres to the principles of academic ethics and actively combats plagiarism and data falsification. RA7.2. The graduate values fairness, equity, and integrity as defining ethical principles.	- Ethics and Academic Integrity - Dissemination of Scientific Research Results - Preparation and Presentation of Research Reports
8.	C8. Understands scientific dissemination models and the social impact of research (e.g., open science, impact factor).	A8. Collaborates effectively in interdisciplinary and international research teams.	RA8. Supports the development of an academic climate based on collaboration, excellence, integrity, and social responsibility.	- Dissemination of Scientific Research Results - Preparation and Presentation of Research Reports
9.	C9. Has knowledge of the specifics of international scientific collaboration and the requirements of mobility programs.	A9. Translates research findings into recommendations relevant for practice, public policies, or organizations.	RA9. Promotes the exchange of best practices in research and higher education, including in international contexts.	- Dissemination of Scientific Research Results - Preparation and Presentation of Research Reports

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