

Organized by: Faculté des sciences économiques, sociales, politiques et de communication (ESPO) Programme code: etri2m - European Qualifications Framework (EQF): 7

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# ETRI2M - Introduction

# Introduction

### Introduction

Organised in collaboration with the UNamur and the KULeuven and equivalent to the MPhil programmes of foreign universities (UK, Netherlands, for example), the master in economic sciences, econometrics orientation is designed for students who envisage continuing their training with a third cycle (doctorate) and wish to receive in two years a training in research that will enable them to pursue a doctoral thesis project under ideal conditions. The courses are given in English by researchers who propose advanced questions in topics of pure economics.

THIS PROGRAMME IS GIVEN AND EVALUATED ENTIRELY IN ENGLISH.

### Your profile

- You have good skills in mathematics and statistics and wish to contribute to the analysis of the most recent economic and social questions;
- you wish to do research and envisage continuing your education with a doctorate;
- you are interested in pure economics and wish to acquire an analytical expertise on economic matters.

## Your future job

Our graduates will orient themselves both towards the private sector and towards the public or institutional sector, where they will hold analytical positions and participate in decision-making of all kinds: economic policy decisions or strategic corporate decisions.

### Your programme

The master offers you

- the possibility of composing your programme à la carte to acquire expertise in a specialised area, as a function of your field of research;
- advanced training in the methodological tools of the economist; many personal works and research seminars on specialised issues;
- a preparation for writing scientific articles in your area of specialisation;
- an integration into international research teams for doing your thesis.

# **ETRI2M - Teaching profile**

# Learning outcomes

Students enrolled on the Master [120] in Economics: Econometrics (joint UCL-UNamur) programme are working towards careers as economists, capable of robustly and critically analysing contemporary socio-economic issues and specialist questions from an expert analytical perspective based on quantitative economics, and capable of completing a high-level research project or filling key posts in the private, public or institutional sector.

As with all Masters studies offered by the UCL School of Economics, the goal of this Master's course is to train academic economists capable of understanding and analysing the real economic and social issues of their era by using clear and robust analytical reasoning, explaining and communicating their analyses to different audiences and incorporating their analyses into broader contexts.

The more specific objective of the Master 120 in Economics: Econometrics programme is to produce academic economists able to:

- master specialist knowledge in subjects related to quantitative economics;
- display a command of advanced methodological tools and strong analytical skills;
- · demonstrate the acquisition of expertise in an advanced field;
- examine, understand and analyse complex and advanced economic and social issues in quantitative economics:
  - by developing clear, robust and highly conceptual economic reasoning and demonstrating analytical expertise based on quantitative economics;
  - applying a global approach at local, national, European and worldwide level;
- discuss and debate complex issues with researchers/experts/specialists;
- draft scientific articles in the chosen specialisation.

Aware of the responsibility associated with their profession, the graduates will have adopted a critical and academic attitude and be able to make and accept decisions completely independently. The graduates will have a variety of skills, particularly in terms of concept and methodology, and will be able to **question**, **improve and develop the contents**, **processes and purposes of professional practices**, **critically examine the innovations resulting from research and apply them in order to shed light on professional practices**. They will be invested in a continuous development approach enabling them, as professionals, to demonstrate expertise, multiple skills and the ability to adapt and evolve positively in their socio-professional environment.

On successful completion of this programme, each student is able to :

#### 1. Develop an "advanced" line of economic reasoning

Develop an "advanced" line of economic reasoning: develop an analysis of complex issues/problems from an expert perspective based on quantitative economics, implementing a robust scientific approach and using advanced methodological tools and strong analytical skills.

1.1. Identify the pertinent issue(s) and summarise the key elements required to understand them.

1.2. Identify and justify what makes a model useful and which context to use it in, particularly by identifying the role of assumptions.

1.3. With regard to real-life issues and their unique features, identify and justify the relevant analytical methods.

1.4. Develop a clear and robust line of reasoning demonstrating a high level of conceptualisation and analytical skill based on quantitative economics.

1.5. Identify and justify the relevant empirical methods to assess and examine theoretical and/or practical issues.

1.6. Collect and select the relevant data, understanding the limits and conducting an appropriate statistical analysis.

1.7. Interpret the results of the statistical analysis, explain the underlying statistical problems and limits and form pertinent conclusions concerning the issues studied.

#### 2. "Problem solver"

Consider, analyse and resolve in-depth and complex socio-economic questions as well as advanced issues related to quantitative economics in a pertinent, critical and innovative manner using an approach based on "advanced" economic reasoning and in interaction with human sciences disciplines, displaying intellectual and methodological independence.

2.1. Identify and take into consideration the interactions between economic analyses and analyses in other human and social sciences and critically analyse them.

2.2. Develop a critical and unique perspective, distinguishing the positive and normative aspects of economics.

2.3. Suggest an original way of considering and resolving an economic and social problem based on "advanced" economic reasoning.

2.4. Demonstrate the ability to use economic tools, including advanced tools of quantitative economics, in an innovative manner.

2.5. Examine, analyse and resolve an advanced and complex socio-economic problem/issue from a global perspective: "Helicopter view and Strategic Thinking" at local, national, European and international level.

2.6. Examine, understand, analyse and debate advanced questions in quantitative economics.

#### 3. Apply specialist skills in quantitative economics

Master and critically apply a body of specialist knowledge, tools and skills in quantitative economics to develop expertise in an advanced field (of research) in order to progress towards professional careers in high-level research or consultancy.

3.1. Master and critically apply specialist knowledge, tools and skills.

3.2. Master and critically apply specialist and advanced knowledge, tools and skills in macroeconomics.

3.3. Master and critically apply specialist and advanced knowledge, tools and skills in econometrics.

3.4. Master and critically apply specialist and advanced knowledge, tools and skills in quantitative economics and applied mathematical economics.

#### Develop a personal high-level scientific research project

Design and develop a personal high-level scientific research project (thesis), implementing a robust methodological approach, to explore in detail an open research issue in quantitative economics, demonstrating a level of expertise making it possible to become part of a research team at the cutting edge of quantitative economics.

4.1. Use basic and specialist tools in a pertinent manner for research in quantitative economics.

4.2. Understand, summarise and discuss high-level scientific articles within the framework of research seminars.

4.3. Devise an open research subject in quantitative economics.

4.4. Report on existing knowledge on this subject using high-level scientific articles.

4.5. Produce an in-depth personal scientific project on the research subject based on a robust methodological approach, demonstrating original scientific content (produced by the student) at the standard required for scientific publication in an international economics journal.

4.6. Prepare high-level scientific articles meeting the criteria for a scientific article published in a renowned international economics journal.

#### 5. Communication and interpersonal skills

Communicate in French and English both verbally and in writing, in a professional manner and meeting the criteria for scientific communication, while adapting to the target audience and context, as well as collaborating respectfully and constructively with the different players involved in a given situation. Specifically in a high-level research or consultancy context.

5.1. Communicate in writing, in a clear and structured manner, in accordance with the communication standards specific to the context and adapting the communication (content and form) to the target audience and intended purpose, and more specifically to an audience of specialists.

5.2. Communicate verbally, in a clear and structured manner, in accordance with the communication standards specific to the context and adapting the communication (content and form) to the target audience and intended purpose, and more specifically to an audience of specialists.

5.3. Put their arguments across pertinently using technical language, according to the audience.

5.4. Put their arguments across pertinently in layman's terms, according to the audience.

5.5. Integrate and work effectively within a team and with different stakeholders involved in a given situation, and more specifically with their peers, on current research issues.

5.6. Communicate articulately in English, verbally and in writing, in a clear, coherent and well-argued manner on general matters or issues relating to the field of economics, adapting to suit the audience and the context. More specifically, in a high-level research or consultancy context.

5.7. Debate and participate in discussion on complex economic issues with researchers/experts/specialists.

#### 6. Operate in an international work environment

Operate in an international work environment, using a scientifically well-founded approach based on quantitative economics, as critical and responsible academics committed to continuous development.

6.1. Adjust to varied and complex contexts and situations and act on them appropriately in a demanding and fast-changing world.

6.2. Develop in an international and multicultural environment in which English is the lingua franca.

6.3. Apply their skills as economists (specialising in quantitative economics) and work, make decisions and act independently and responsibly to undertake a PhD in a research team at the cutting edge of quantitative economics or fill key strategic posts in the private, public or institutional sector.

6. 4. Embark on a career, applying a well-founded academic approach (from a theoretical and methodological perspective) characterised by critical detachment and with a genuine ability to influence the development of their environment.

6.5. Invest in the self-assessment, learning and continuous development required to evolve positively in a professional environment.

## **Programme structure**

The programme is organized by UCL through the Louvain School of Economics with the cooperation of the FUNDP in Namur and KULeuven and other Academy partners.

#### Structure

The 120 credit Master in Economic Sciences with Econometrics is centred on the research focus. The core subjects of the econometrics component is the same as the research focus of the general course. The 30 credits are therefore common to both the general course and the course with econometrics. The 120 credit Master with econometrics comprises :

- core subjects of 60 credits ;
- a focus of 30 credits ;
- two options of 15 credits each.

#### PLEASE NOTE THAT THIS PROGRAMME IS BOTH GIVEN AND ASSESSED IN ENGLISH

Whatever the focus or the options chosen, the programme of this master shall totalize 120 credits, spread over two years of studies each of 60 credits.

> Main Courses [en-prog-2014-etri2m-letri200t.html]

> Research focus [en-prog-2014-etri2m-letri200a]

Options courses

- > Advanced Economics [en-prog-2014-etri2m-letri220o.html]
- > Topics in Economic Research [en-prog-2014-etri2m-letri2100.html]

# ETRI2M Detailled programme

# Programme by subject

### CORE COURSES [75.0]

Periodic courses not taught during 2014-2015     Periodic courses not taught during 2014-2015     H Two years course	<ul> <li>✔ Mandatory</li> <li>▲ Courses not taught during 2014-2015</li> <li>⊕ Periodic courses taught during 2014-2015</li> </ul>	<ul> <li>Ø Optional</li> <li>Ø Periodic courses not taught during 2014-2015</li> <li>₩ Two years course</li> </ul>
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Click on the course title to see detailed informations (objectives, methods, evaluation...)

					Yea 1	
O LETRI2800	Essay paper	N.		15 Credits	х	
• Thesis (25 cr	edits)					
• LETRI2900	Thesis	N.		20 Credits		×
O LETRI2910	Tutorial	N.	0h+6h	5 Credits		x

#### o Advanced Courses in Economics (15 credits)

3 courses out of the following will be offered every year. The student who wants to replace one of this courses by another one from the list Advanced Economic Analysis II will introduce a motivated request.

Stecon2701	Advanced course in economics I	Olivier Scaillet	15h	5 Credits	х
Stecon2702	Advanced course in economics II	Bruno Van der Linden	15h	5 Credits	х
S LECON2703	Advanced course in economics III	Ernesto San Martin Gutiérrez	15h	5 Credits	x
Stecon2704	Advanced Course in Economics IV	Jean Hindriks	15h	5 Credits	x
X LECON2705	Advanced Course in Economics V	Rigas Oikonomou	15h	5 Credits	х

					Year <mark>1</mark> 2
₿ LECON2706	Advanced Course in Economics VI	Ernesto San Martin Gutiérrez (compensates Sébastien Van Bellegem), Sébastien Van Bellegem	15h	5 Credits	x x

### o Seminar (5 credits)

1 among	:					
🗱 LEC	ON2163	Econometrics	Ν.	5 Credits	х	×
S LEC	ON2165	Economic Theory	Ν.	5 Credits	х	×
🗱 LEC	ON2167	Séminaire économique de Louvain	N.	5 Credits	х	x

### o Quantitative Methods (15 credits)

O LECON2500	Mathematics and Statistics for Economics	Julio Davila Muro, Sébastien Van Bellegem	30h	5 Credits	1q	x
• LECON2600	Dynamical Methods in Economics	Rigas Oikonomou	30h	5 Credits	1q	х

# • Econometrics (5 credits)

Un parmi							
Stecon2601	Advanced Econometrics II - Time Series Econometrics	Zhengyuan Gao	30h	5 Credits	2q	x	x
Stecon2602	Advanced Econometrics II - Microeconometrics	William Parienté	30h	5 Credits	2q	x	x

## **RESEARCH FOCUS [30.0]**

O Mandatory △ Courses not taught during 2014-2015	✿ Optional Ø Periodic courses not taught during 2014-2015
<ul> <li>Periodic courses taught during 2014-2015</li> </ul>	# Two years course

Click on the course title to see detailed informations (objectives, methods, evaluation...)

0	Foundations	in	economics	(25	credits)
-	1 001100010		000110111100	1-0	0.00.00/

• LECON2111	Advanced Microeconomics I: Decision and Game Theory	François Maniquet	30h+6h	5 Credits	1q	x
O LECON2112	Advanced Microeconomics II: General Equilibrium and Mechanism Design	Julio Davila Muro	30h+6h	5 Credits	2q	x
O LECON2121	Advanced Macroeconomics I : Intertemporal Behavior and Business Cycles	Luca Pensieroso	30h+6h	5 Credits	1q	x
• LECON2122	Advanced Macroeconomics II : Growth, Dynamics and Policy	Rigas Oikonomou	30h+6h	5 Credits	2q	x
• LECON2131	Advanced Econometrics - UCL	Sébastien Van Bellegem	30h	5 Credits	1q	x

## & Research seminar I (5 credits)

1 among :						
SILECON2161	Research Seminar I: Macroeconomics	David De la Croix, Fabian Kindermann (compensates David De la Croix)	30h	5 Credits	2q	x
Stecon2653	Research Seminar I : Microeconomics (M613 - UNamur)	Ν.	30h	5 Credits	2q	x
Stecon2603	RS I: Econometrics Workshop	Zhengyuan Gao	30h	5 Credits	2q	х

Year 1 2

### **OPTIONS** [15.0]

Les étudiants choisissent trois cours (15 crédits) parmi l'offre de cours des deux options suivantes.

The student choose three courses among the list Advanced Economic I or Advanced Economic II

- > Advanced Economics [en-prog-2014-etri2m-letri2200]
- > Topics in Economic Research [en-prog-2014-etri2m-letri2100]

# ADVANCED ECONOMICS [15.0]

• Mandatory	🗱 Optional			
$\Delta$ Courses not taught during 2014-2015	Periodic courses not taught during 2014-2015			
Periodic courses taught during 2014-2015	++ Two years course			
Oligic on the second title to goe detailed informations (abjectives methods evoluation )				

Click on the course title to see detailed informations (objectives, methods, evaluation...)

						Year 1 2
& Quantitative	methods					
Stecon2603	RS I: Econometrics Workshop	Zhengyuan Gao	30h	5 Credits	2q	х

#### & International

S LECON2604	Advanced International Trade	Florian Mayneris, Mathieu Parenti	30h	5 Credits	1q	x	
Stecon2622	Advanced Intern Monetary Eco - KUL	N.		5 Credits		х	x
Stecon2624	Current Development in European Integration - KUL	Ν.		5 Credits		x	x

#### 

Stecon2605	Capital Markets Theory	Sophie Béreau	30h	5 Credits	2q ⊕	х	
X LECON2625	Fixed Income Securities - KUL	Ν.		5 Credits		x	x
X LECON2654	Advanced Monetary Economics (UNamur)	Ν.	30h	5 Credits	2q	x	x

### & Public Economics

Stecon2607	Public Economics	Jean Hindriks	30h	5 Credits	2q	x
₿ LECON2069	Ethics and Social Choice	François Maniquet, Eve Ramaekers (compensates François Maniquet)	30h	5 Credits	1q ⊕	x
Stecon2620	Advanced Environmental and Transportation - KUL	N.		5 Credits		х

#### & Reflexive courses

X LECON2065	History of Economic Thought	Luca Pensieroso	30h	5 Credits	2q	х
Stecon2067	Critical Analysis of Market Economies	Christian Arnsperger	30h	5 Credits	1q Ø	х

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S LECON2608	Advanced Labour Economics	Muriel Dejemeppe, Bruno Van der Linden	30h	5 Credits	1q	х
S LECON2342	Development theories	Andreia Lemaître, Marthe Nyssens	30h	5 Credits	2q	х
X LECON2652	Microinstitutions and Markets in Developing Economies - UNamur	Ν.	30h	5 Credits	2q	хх

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						Ye	ar
						1	2
Stecon2621	Advanced Industrial Economics - KUL	Ν.		5 Credits		х	x
Stecon2610	Industrial Organization	Florian Mayneris, Mathieu Parenti	30h	5 Credits	1q	х	x
Stecon2655	Population and Family Economics	Fabio Mariani	30h	5 Credits	2q Ø	х	
Stecon2665	Political Economy and Macro Institutions in Developing Economies - UNamur	Ν.	30h	5 Credits	2q	х	

## **TOPICS IN ECONOMIC RESEARCH [15.0]**

L'étudiant choisira parmi les cours d'économie de niveau approfondi enseignés à l'UCL - voir liste ci-dessous. Il pourra également suivre des cours d'économie de niveau approfondi dans d'autres universités belges (UNamur, KULeuven, USaint-Louis-Bruxelles). Cette liste est indicative et pourra évoluer au fil du temps. Chaque cours vaut 5 crédits.

O Mandatory	🗱 Optional
$\Delta$ Courses not taught during 2014-2015	Periodic courses not taught during 2014-2015
Periodic courses taught during 2014-2015	# Two years course

Click on the course title to see detailed informations (objectives, methods, evaluation...)

## Year 1 2

### & Advanced Courses in Economics at UCL

Stecon2701	Advanced course in economics I	Olivier Scaillet	15h	5 Credits	x	х
Stecon2702	Advanced course in economics II	Bruno Van der Linden	15h	5 Credits	x	x
Science Lecon2703	Advanced course in economics III	Ernesto San Martin Gutiérrez	15h	5 Credits	x	x
Stecon2704	Advanced Course in Economics IV	Jean Hindriks	15h	5 Credits	x	x
X LECON2705	Advanced Course in Economics V	Rigas Oikonomou	15h	5 Credits	x	x
<sup>to</sup> LECON2706	Advanced Course in Economics VI	Ernesto San Martin Gutiérrez (compensates Sébastien Van Bellegem), Sébastien Van Bellegem	15h	5 Credits	х	x
8	Advanced Courses in Economics at UNamur	N.		Credits	x	x
8	Advanced Courses in Economics at KULeuven	N.		Credits	x	x
8	Advanced Courses in Economics at USaint-Louis (BXL)	N.		Credits	x	x
8	Advanced Courses in Economics at other Universities	Ν.		Credits	x	x

# **ETRI2M - Information**

# Admission

General and specific admission requirements for this program must be satisfied at the time of enrolling at the university...

Accès sur dossier :

• Le responsable académique du programme détermine sur base du dossier l'éventuel complément de formation.

• Les candidats doivent avoir un bon niveau d'anglais avant d'entamer le master 120 en économie.

Une preuve d'aptitude à suivre des cours en anglais DOIT IMPERATIVEMENT être jointe au dossier de la demande d'admission :

- soit un relevé de note universitaire prouvant que vous avez suivis au minimum 3 cours d'économie en anglais durant votre parcours universitaire antérieur;
- soit la preuve de la réussite d'un test d'anglais de niveau B2 du CECR : Cadre Européen Commun de Référence (Common European Framework).
- University Bachelors
- Non university Bachelors
- Holders of a 2nd cycle University degree
- Holders of a non-University 2nd cycle degree
- Adults taking up their university training
- Personalized access

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# **University Bachelors**

Diploma	Special Requirements	Access	Remarks				
UCL Bachelors							
		Direct access					
Tout bachelier	S'il a suivi la mineure en économie	On the file: direct access or access with additional training					
Others Bachelors of the French	Others Bachelors of the French speaking Community of Belgium						
		Direct access					
Bachelors of the Dutch speaking	ng Community of Belgium						
		Direct access					
Tout bachelier	S'il peut justifier des connaissances en économie et méthodes quantitatives	Access with additional training					
Foreign Bachelors							
		Direct access					

## Non university Bachelors

Diploma	Access	Remarks
> Find out more about links to the university		

# Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
"Licenciés"			

### UCL - Université catholique de Louvain Study Programme 2014-2015 Master [120] in Economics: Econometrics [etri2m]

	Direct access	
Masters		
	Direct access	

# Holders of a non-University 2nd cycle degree

Diploma	Access	Remarks	
> Find out more about links to the university			

# Adults taking up their university training

> See the website Valorisation des acquis de l'expérience

It is possible to gain admission to all masters courses via the validation of professional experience procedure.

Entry to all Masters (with the exception of Advanced Masters) can be gained through the special procedure for accrediting prior learning and experience known as VAE (validation des acquis de l'expérience).

## **Personalized access**

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Reminder : all Masters (apart from Advanced Masters) are also accessible on file.

Entry to all Masters (with the exception of Advanced Masters) can also be gained on submission of a special personal file.

## Admission and Enrolment Procedures for general registration

# **Teaching method**

This focus is primarily aimed at training for research in economics. The teaching methods used vary according to the objective. Traditional lectures provide students with the basic tools for research in economics. Depending on the subject, these lectures are complemented by practical work or supervised reading of scientific articles in the relevant field. The students can go on to deliver an oral presentation of their research as part of a seminar in support of their thesis. The thesis prepares students to author scientific articles. Finally, students learn how to understand and summarise presentations at the leading edge of research within the framework of Research Seminars I and II.

This programme is provided in English only.

# **Evaluation**

The evaluation methods comply with the regulations concerning studies and exams. More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".

Several assessment methods are used, according to the type of activity. The assessment of work completed during classes will typically be based on an examination (written or oral) and/or on an individual project; assessment of participation in seminars will be based on the production and oral presentation of an individual or group work. The thesis is assessed by a panel on the basis of the written document and its oral presentation, in both its interim and final versions.

# Mobility and/or Internationalisation outlook

This programme, entirely in English and designed as training for research, is aimed at an international audience. Louvain has a long tradition and an outstanding reputation in this field. The majority of the students doing a doctorate are non-Belgian. Cooperation with KUL makes the programme more attractive since advanced level subjects (all in English) are available in a wide variety of key fields in economics.

# Possible trainings at the end of the programme

- Advanced Masters : Master in International Economics and Development (University Development Commission Commission universitaire au développement CUD)
- Doctoral programme training : doctorate in Economic Sciences

# Certificates

Students who decide only to take a part of the proposed programme may either move to the 60 credit general Master programme or, alternatively, receive a diploma.

## Contacts

# **Curriculum Managment**

Entite de la structure ECON

Acronyme	ECON
Dénomination	Ecole des Sciences économiques/Economics School of Louvain
Adresse	Place Montesquieu, 3 bte L2.06.01
	1348 Louvain-la-Neuve
	Tél 010 47 39 53 - Fax 010 47 32 90
Site web	https://www.uclouvain.be/econ.html
Secteur	Secteur des sciences humaines (SSH)
Faculté	Faculté des sciences économiques, sociales, politiques et de communication (ESPO)
Commission de programme	Ecole des Sciences économiques/Economics School of Louvain (ECON)

### Academic Supervisor : Fabio Mariani

## Jury

Président du Jury : **Fabio Mariani** Secrétaire du Jury : **Julio Davila** 

## **Usefull Contacts**

Responsable administrative : Marie Gilot

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